

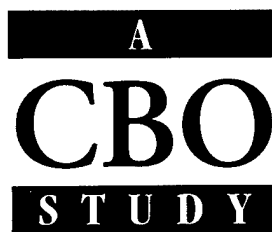
A
CBO
STUDY

SEPTEMBER 2003

The Past and
Future of U.S.
Passenger Rail
Service



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The Past and Future of U.S. Passenger Rail Service

September 2003

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Notes

Numbers in the text and tables of this study may not add up to totals because of rounding.

The cover image, showing an Amtrak train (foreground) and a Washington Metrorail train (background) in Alexandria, Va., is based on a photograph that is ©Bill Hough (www.auctiontransportation.com).

The National Railroad Passenger Corporation (also known as Amtrak) has been in a shaky financial condition ever since it was created by the federal government more than 30 years ago. Although Amtrak was established as a private, for-profit company, it has needed—and received—federal subsidies every year since it began providing service in 1971. Those subsidies totaled over \$1 billion for 2003. However, according to Amtrak executives and independent analysts, that amount is insufficient for the railroad to sustain its current service safely and reliably over the long run.

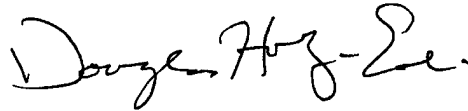
Amtrak's authorization expired in 2002. In considering legislation to reauthorize federal funding of the railroad, the Congress will again face the issue—as it has throughout Amtrak's history—of what the goal should be for an intercity passenger rail program. Should service be operated only where it can make a profit (or at least cover operating expenses)? Or should the federal government also commit to subsidizing money-losing trains to meet a perceived need for public transportation? Given that some service is unlikely ever to be able to cover its operating costs, are there other organizational or institutional arrangements that could offer service at a lower cost to taxpayers?

This Congressional Budget Office (CBO) study—prepared at the request of the Senate Budget Committee—reviews past policies toward Amtrak and the fundamental economics of passenger rail service. The review suggests that there are only limited conditions under which passenger rail service in the United States could be economically viable without subsidies. This study also explores the implications of four options for future federal support of passenger rail, ranging from eliminating federal subsidies to funding a massive expansion of rail service. In keeping with CBO's mandate to provide objective, impartial analysis, the study makes no recommendations.

Elizabeth Pinkston of CBO's Microeconomic and Financial Studies Division wrote the study under the supervision of David Moore and Roger Hitchner. Many people reviewed drafts of the study and provided useful comments, including Francis Mulvey and Glenn Scammel of the House Committee on Transportation and Infrastructure; Mary Phillips of the Senate Committee on Commerce, Science, and Transportation; Louis Thompson, formerly of the World Bank; José A. Gómez-Ibáñez of Harvard University; Anthony Perl of the University of Calgary; Marcus Mason of Amtrak; Neil Moyer and Conan Magee of the Federal Railroad Administration; Jack Bennett, Thomas Marchessault, Jeanne O'Leary, Sherry Riklin, and Edward Weiner of the Office of the Secretary of Transportation; John Fischer and Randy Peterman of the Congressional Research Service; James Ratzenberger of the General Accounting Office; Paul Dickens; and Peter Fontaine, Rachel Milberg, and Carla Tighe Murray of CBO.

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Christian Spoor edited the study, and Leah Mazade proofread it. Angela McCollough prepared the tables. Maureen Costantino designed the cover and produced the figures. Lenny Skutnik printed the initial copies of the report, and Annette Kalicki prepared the electronic versions for CBO's Web site (www.cbo.gov).

A handwritten signature in black ink, reading "Douglas Holtz-Eakin". The signature is fluid and cursive, with the first name "Douglas" being the most prominent.

Douglas Holtz-Eakin
Director

September 2003

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Summary

More than three decades after the Congress and the President created the National Railroad Passenger Corporation (known as Amtrak), federal policies toward intercity passenger rail service remain unsettled. Policymakers have not been able to agree about whether the company should be a private, for-profit enterprise (like airlines and intercity bus companies) or a public service (like urban mass transit) that would use government subsidies to achieve social objectives.

Amtrak was originally intended to be a for-profit company that would be free of federal subsidies within a few years. But policymakers continued to provide subsidies to keep trains running even when those trains could not cover their costs. Until 1997, the Congress imposed conditions—such as requiring the operation of a national network—that kept Amtrak from acting like a for-profit enterprise. Even after the Amtrak Reform and Accountability Act of 1997 freed the company from most constraints, Amtrak continued to operate routes and maintain policies that were uneconomic but helpful in securing federal subsidies. As a result, Amtrak has needed federal support every year of its 33-year history. Recently, those subsidies have accounted for about one-third of the company's total revenues.

Although Amtrak continues to receive annual appropriations, its authorization expired in 2002. As lawmakers consider legislation to reauthorize federal funding of Amtrak, they are wrestling with the question of what to do about U.S. passenger rail in general and Amtrak in particular.

This study reviews Amtrak's history and the economics of passenger rail. It also examines four options for the future of intercity passenger rail:

- Eliminating federal subsidies and shutting down service;
- Ending national service and focusing instead on passenger rail's strongest areas (relatively short, densely populated corridors, such as the Northeast and parts of California);
- Keeping national long-distance service as it is today but upgrading the corridors; and
- Substantially improving Amtrak's entire network through a major increase in funding, with a view to giving rail a much bigger role in transportation between U.S. cities.

Those four options are by no means the only ones available, but they represent the broad range of policy choices that lawmakers face.

The Recent Worsening of Amtrak's Financial Condition

The 1997 Reform Act set a goal for Amtrak to run without federal operating subsidies by December 2002. Ironically, Amtrak's attempt to achieve that goal appears to have contributed to a profound worsening of the company's financial situation. In the years after the law was

enacted, Amtrak incurred increasing amounts of debt as it expanded business in the hope that rising revenues would outpace the accompanying rise in costs. (That debt was incurred even though Amtrak received \$2.2 billion in funds from the Taxpayer Relief Act of 1997 for capital improvements, in addition to its annual federal operating subsidy.) Amtrak's leadership repeatedly asserted that the company was on a "glide path" to meeting the goal of operating self-sufficiency by December 2002. Increases in debt and creative accounting helped give the appearance—at least to casual observers—that Amtrak was indeed on track to meet that objective.¹ However, warning signals were issued by both the General Accounting Office and the Inspector General of the Department of Transportation that all was not well. Nevertheless, Amtrak was able to lumber on until early in fiscal year 2002.

Several events brought Amtrak's financial crisis to a head. In November 2001, the Amtrak Reform Council, an independent panel created by the 1997 Reform Act to oversee Amtrak's progress toward operational self-sufficiency, issued a formal finding that the company would not be able to meet that goal. Amtrak was spending money faster than it was taking money in, making financing critically important. In May 2002, new managers were brought in, who publicly acknowledged the company's dire financial condition. They announced in June that Amtrak had exhausted its federal subsidy of \$521 million for fiscal year 2002 and would cease operations around the Fourth of July if it did not receive additional federal aid. To avert a shutdown during the holiday period, when the Congress was not in session to appropriate more funding, the Bush Administration gave Amtrak a loan of \$100 million. When the Congress reconvened after the holiday, it provided a supplemental appropriation of \$205 million. For 2003, the Congress approved \$1.05 billion for Amtrak and deferred repayment of the loan.²

1. See "TW Exclusive Interview: Amtrak President & CEO David Gunn," *Transportation Weekly*, Legislative Services Group, vol. 3, no. 43 (September 3, 2002), p. 5, in which Amtrak's new president refers to "an attempt [before he arrived] to prop up the income statement by playing around with capital and operating" expenses.

2. Because of an across-the-board reduction of 0.65 percent in discretionary programs for 2003, Amtrak actually received \$1.043 billion.

According to Amtrak officials, that amount of money is not large enough for the company both to sustain its current operations and to address a backlog of capital needs over the long term. Consequently, Amtrak is seeking \$1.8 billion in federal subsidies for 2004, twice the \$900 million that the President requested in his budget submission.

Some policymakers think that virtually any additional federal funding for Amtrak will go to waste unless policies toward passenger rail are fundamentally overhauled. Others say that although Amtrak may not have used its resources as wisely as possible, it never had enough money to make the investments needed for high-quality service. However, even reliable, comfortable trains might not be able to attract enough passengers to turn a profit, except on a few routes. Over Amtrak's history, it has proved impossible to bridge the chasm between policymakers who favor private enterprise with a minimum of government intervention (and subsidizing) and those who believe that the federal government should provide enough financial assistance to ensure the existence of a first-class national passenger rail system.

Past Policies Toward Amtrak

Given the lack of consensus about the role that passenger rail service should play in the nation's transportation system—and the role the federal government should play in fostering that service—it is not surprising that federal policies governing Amtrak have varied over the years and that legislation has often contained internal inconsistencies. Policymakers who favored the for-profit-enterprise approach wrote legislative provisions that set goals of self-sufficiency, required Amtrak to make detailed reports about the profitability of each train, and ordered the company to develop plans for dropping money-losing service. Policymakers who viewed Amtrak as a public service wrote legislative provisions that created a politically appointed board of directors, emphasized a nationwide rail system, preserved expensive compensation provisions for laid-off workers, and forced Amtrak to provide discounted fares for people with disabilities.

Such competing requirements could often be found in the same legislation. As a result, Amtrak legislation has often had unintended consequences. That fact, and the

company's present untenable condition, indicate the importance of several steps:

- Reaching a consensus about the appropriate role of the federal government in intercity passenger rail service,
- Setting realistic and achievable goals for that service,
- Evaluating progress toward attaining those goals,
- Making midcourse corrections if necessary, and
- Requiring greater transparency and accountability of Amtrak's finances.

The Economics of Passenger Rail

Until Amtrak was created, passenger rail service in the United States was provided by privately owned railroad companies whose main business in most parts of the country was transporting freight. Both passenger and freight rail experienced a significant decline in market share by the middle of the 20th century as travelers and shippers turned increasingly to airlines, trucks, and automobiles to meet their transportation needs. Railroads in the Northeast faced particularly acute financial problems, and by the late 1960s, most of the rail operations in that region were either bankrupt or on the brink. In response, the federal government took various policy actions, including creating Amtrak and spinning off to it the passenger operations of the freight railroads.³ The idea was that if the railroads could get rid of their unprofitable passenger service, they would stand a better chance of recovering financially—which they eventually did. In retrospect, it should not be surprising that the unprofitable part of the rail business—passenger operations—would continue to lose money when operating as a separate entity. Policymakers who expected it to become prof-

itable may have anticipated that Amtrak would shed its money-losing routes and focus on the most promising ones.

By 1970, the year Amtrak was authorized, the number of intercity passenger-miles traveled by rail had plummeted to 6.2 billion from a high of 67 billion during World War II.⁴ In comparison, travel by air carrier accounted for more than 100 billion passenger-miles that year, and intercity travel by bus topped 25 billion passenger-miles.⁵ Since then, intercity rail travel has generally remained around 5 billion to 6 billion passenger-miles annually, and bus travel has stayed at about 25 billion. Air travel has continued to grow, however, reaching 515 billion passenger-miles in 2000.

Amtrak has achieved its greatest success in terms of market share in the Northeast Corridor, which links Boston, New York City, Washington, D.C., and intermediate points. The Northeast provides closely spaced clusters of high population density—conditions under which rail has the best chance of competing with other modes of transportation. The distances between many cities are short enough that train travel is as fast as air travel, and both the highway and aviation systems are sufficiently congested that travel by car, bus, and airplane is frequently subject to delays.

In the large sections of the country that lie outside a handful of densely populated corridors, however, passenger rail faces enormous competition from airlines and automobiles. Time-sensitive travelers—particularly business travelers—generally find it too costly in terms of time to take long-distance trips by train. For trips longer than 300 miles, air travel almost always wins out, unless a family is traveling together, in which case the automobile is likely to be less expensive, even when the value of time is included in the cost. For trips of 100 to 300 miles, the cost calculation depends on how many people are traveling together, how congested highways and airports are, and how long it takes to get to train stations or

3. Preserving freight rail service in the Northeast also involved creating the government-owned Conrail out of the remains of bankrupt railroads in the Northeast and Midwest, abandoning thousands of miles of unprofitable track, and giving freight railroads much greater flexibility to change their rates and service than they had during the first three-quarters of the 20th century, when they were under strict regulation by the Interstate Commerce Commission.

4. A passenger-mile is the movement of one passenger the distance of one mile.

5. The data for intercity bus travel are problematic. The numbers presented here include charter-bus travel as well as scheduled regular-route travel.

airports from a traveler's origin and destination. One reason for rail's economic advantage in the Northeast is that train stations are located in central business districts, from which many trips begin and to which there is convenient access by mass transit.

Policy Options for the Future of Passenger Rail

This study analyzes four broad policy options that represent different visions of a passenger rail system and national rail policy. Option I would end all federal subsidies for Amtrak—either immediately or during a phase-out process that would provide time for states or other entities to step in. Unless state or local governments offered financial assistance, this option would probably result in the termination of most, if not all, intercity passenger rail service. (Commuter rail service, which operates within a given metropolitan area, would most likely continue.) People traveling between cities would have to turn to airplanes, buses, or automobiles. This option could have adverse consequences not only for Amtrak's passengers and workers but also for freight railroads and their employees because it could financially weaken the Railroad Retirement System.

Option II would build on passenger rail's comparative strengths: service between densely populated communities that are located close enough to each other to enable trip times of three hours or less. Federal financial assistance could be redirected from the current general subsidies for a nationwide system to corridors where the demand for passenger rail is high enough to cover operating expenses. The loss of subsidies for long-distance service would most likely mean the shutdown of most or all of those routes, unless state governments were willing to subsidize them. That closure would lead travelers to shift to more cost-effective modes for such travel. This

option could have adverse effects on railroad workers, although reductions in long-distance service would be offset in whole or in part by new corridor services.

Option III would increase federal subsidies to upgrade the corridors where rail has the best chance of providing economic service. At the same time, it would preserve the existing nationwide passenger rail network. A decision to keep subsidizing nationwide service that cannot be economic implies a social vision in which the United States must remain connected in a rail network and its residents are entitled to a choice of modes. In other words, even if they have access to airports and highways, they should also have access to trains. Besides appealing to advocates of equal access, this option would appeal to people who favor redundancy in transportation options in case of a national emergency. However, there is currently little excess capacity in the rail system to handle a surge of passengers in an emergency. This option would have a cost in terms of economic efficiency because continuing to subsidize long-distance service would use resources that could be employed to improve more cost-effective modes of transportation.

Option IV envisions a passenger rail system that would play a far greater role in the nation's transportation system than it does at present. This option would aim to make rail the mode of choice for trips of up to several hundred miles. Doing that would require massively increasing investment in tracks and equipment to enable trains to operate safely at much higher speeds. Unless new breakthroughs in rail technology significantly changed the basic economics, however, this option would reduce productivity by diverting federal assistance from more cost-effective modes to rail. It would require many billions of dollars that in the end would probably have to come from increases in taxes or cuts in spending for other federal programs.

Introduction: Amtrak's Current Situation

Passenger rail service in the United States is at a critical juncture. More than 30 years ago, the federal government created the National Railroad Passenger Corporation, known as Amtrak, by spinning off freight railroads' ailing passenger services. Although Amtrak was supposed to become self-sufficient by the end of last year, it remains heavily in debt and continues to receive large federal subsidies. Now, as it awaits reauthorization by lawmakers, Amtrak is the subject of numerous proposals that range from eliminating federal funding for the company to increasing funding dramatically.

In recent years, Amtrak has lurched from one fiscal crisis to the next. Early in the summer of 2002, it exhausted the federal subsidy of \$521 million that had been appropriated for fiscal year 2002 and had been intended to last through September. Threatening to shut down operations around the time of the July Fourth holiday, when the Congress was not in session, Amtrak sought and received a federal loan of \$100 million.¹ When the Congress reconvened, it passed \$205 million in supplemental appropriations to get Amtrak through the rest of 2002. For 2003, the Congress approved \$1.05 billion in appropriations

for Amtrak and deferred repayment of the company's loan.²

In addition to the financial crisis, 2002 saw a change in leadership at Amtrak. A few months after David Gunn became president and chief executive officer in May 2002, he described the condition of his company as "nearly insolvent, [with] equipment in terrible condition, [and] \$3 billion worth of non-defeased debt."³ Not long afterward, he announced that Amtrak would need up to \$2 billion a year for track, bridge, and train repairs—nearly double the current federal subsidy.⁴

1. Besides suspending Amtrak's intercity passenger operations, a shutdown could also have jeopardized local commuter rail services that use Amtrak lines or that Amtrak runs under contract to commuter agencies.

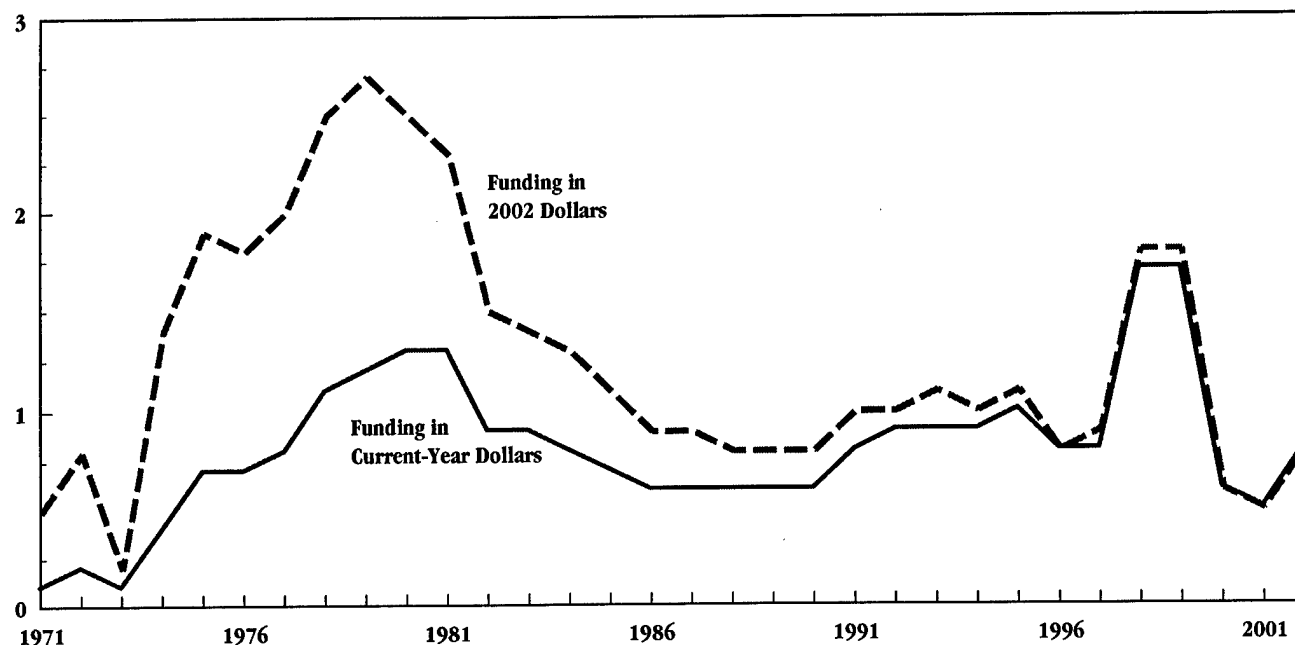
2. Those provisions were enacted on February 20, 2003, in the Consolidated Appropriations Resolution, 2003 (Public Law 108-7). Because that legislation also contained an across-the-board cut of 0.65 percent in discretionary programs, Amtrak actually received \$1.043 billion for 2003. From October 1, 2002, until that law was enacted, Amtrak had been receiving a federal subsidy at an annual rate of about \$1 billion under a continuing resolution.

3. "TW Exclusive Interview: Amtrak President & CEO David Gunn," *Transportation Weekly*, Legislative Services Group, vol. 3, no. 43 (September 3, 2002), p. 4. Nondefeased debt is debt for which the borrower has not set aside in a trust account a sufficient amount of risk-free securities (such as Treasury bonds) that would provide cash to repay the debt when it comes due.

4. "Gunn: Amtrak Needs Up to \$2 Billion Yearly to Repair Tracks and Bridges," *AASHTO Journal*, American Association of State Highway and Transportation Officials (January 24, 2003), p. 5.

Figure 1.**Federal Funding of Amtrak, 1971 to 2002**

(Billions of dollars)



Source: Congressional Budget Office based on data from the Department of Transportation.

Although Amtrak received appropriations for 2003, its authorization for federal funding expired at the end of September 2002. As lawmakers consider reauthorization, they are wrestling with the question of what to do about passenger rail service in general and Amtrak in particular.

In the three decades since Amtrak's creation, lawmakers have tried numerous policy approaches to the company but have not yet been able to achieve consensus on a long-term goal. The chief point of contention has been whether passenger rail should be a national system that receives federal subsidies for routes where it cannot cover its costs or whether it should be an enterprise that offers service only where profitable. In point of fact, Amtrak has received federal subsidies every year since it began providing service in 1971 (see Figure 1). Those subsidies represent a substantial share of the company's revenues: about 21 percent in 2001 and 32 percent in 2002 (see Figure 2).⁵

The question of whether Amtrak should operate as a business or as a public service is a matter for the political process to decide and thus is outside the scope of this study. Instead, this analysis looks at how passenger rail reached its current predicament and discusses the implications of alternative policy directions. To that end, the study examines the history and economics of passenger rail service in the United States and analyzes several fundamentally different options for the future of passenger rail that the Congress may consider in the coming months—options that range from ending federal support to boosting it enough to upgrade the nation's entire passenger rail network.

A Mandate to Achieve Self-Sufficiency

In 1997, the Congress passed the Amtrak Reform and Accountability Act, which authorized funding for Amtrak through 2002 and directed the company to take the necessary business measures to run without federal operating subsidies by December 2002. That law (the Reform Act) authorized about \$1 billion a year in appropriations from

5. In its accounting, Amtrak does not include federal subsidies as revenues.

the Treasury's general fund for Amtrak for the 1998-2002 period.

Until early in 2002, Amtrak's management assured the Congress that the company was on a "glide path" to operating self-sufficiency in conformity with the Reform Act.⁶ In recent years, however, Amtrak has sunk deeper in debt as it borrowed heavily to finance its current operations. In the summer of 2001, Amtrak borrowed \$300 million against one of its most valuable assets, Penn Station in New York City, to cover operating costs. In all, its debt has increased by about \$3 billion over the past five years, and its interest costs have soared.

In November 2001, the Amtrak Reform Council, a panel established by the Reform Act to monitor Amtrak's finances, made a formal finding that Amtrak would not be able to achieve operating self-sufficiency by the December 2002 deadline. That finding, along with Amtrak's worsening financial situation, precipitated a number of proposals for reform—ranging from letting Amtrak go bankrupt to boosting annual federal funding for passenger rail nearly tenfold. Some proposals would keep Amtrak's corporate structure essentially intact, whereas others would break the company into separate components. The reform council's own proposal was to split Amtrak into two companies (one to own and maintain tracks and facilities in the Northeast and the other to run trains) and to create a new organization that would oversee planning and financing for passenger rail.

Recent Administration and Congressional Plans

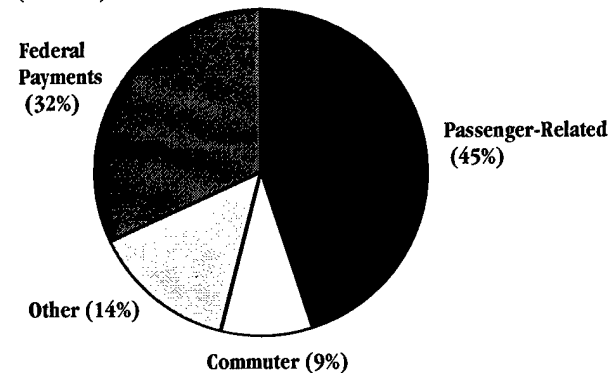
In July 2003, the Bush Administration proposed legislation that followed the general lines of the reform council's recommendation. That legislation (the Passenger Rail Investment Reform Act, S. 1501) would establish three entities over several years: a private company that would

6. See, for example, the statement of Tommy Thompson, Chairman, Amtrak Reform Board, before the Subcommittee on Surface Transportation and Merchant Marine of the Senate Committee on Commerce, February 23, 2000. Those assurances came under the leadership of Amtrak President and Chief Executive Officer George Warrington, who headed the company from December 1997 to April 2002.

Figure 2.

Sources of Amtrak's Operating Revenues, Including Federal Payments, 2002

(Percent)



Source: Congressional Budget Office based on data from Amtrak's 2002 audited consolidated financial statements.

Note: Passenger-related revenues result from ticket sales to Amtrak passengers, food sales on board trains, and so forth. Commuter revenues result from contractual payments by commuter railroads, state agencies, and local commuter authorities to Amtrak for use of its tracks or facilities and for Amtrak's handling of switching and other operations.

operate trains under contract to states and multistate compacts, a private company that would maintain and operate the infrastructure on the Northeast Corridor under contract to a multistate Northeast Corridor Compact, and an entity that would retain Amtrak's name and rights to use the tracks of freight railroads.⁷

The Administration's plan would phase out direct subsidies to Amtrak and replace them with federal matching grants to states for capital investments in passenger rail. Eventually, the states would be able to contract for train operations with a private company or public transit agency.

Two days after the Administration unveiled its bill, several senators countered with a proposal to substantially increase funding for the national passenger rail system. That plan

7. The Northeast Corridor includes the rail lines linking Boston, New York City, Washington, D.C., and intermediate points.

(the American Rail Equity Act, S. 1505) would authorize \$2 billion a year for Amtrak's operating expenses and create a Rail Infrastructure Finance Corporation that would issue up to \$48 billion in tax-credit bonds over six years to benefit passenger rail.

In June, the House Committee on Transportation and Infrastructure approved the Amtrak Reauthorization Act of 2003 (H.R. 2572), which would authorize annual funding of \$2 billion over the next three years for Amtrak. The committee also approved legislation that would provide \$60 billion over 10 years for high-speed rail.⁸ That funding would not be limited to Amtrak.

8. The Railroad Infrastructure Development and Expansion Act for the 21st Century ("RIDE-21"), H.R. 2571.

In July, the Subcommittee on Transportation, Treasury, and Independent Agencies of the House Committee on Appropriations approved \$580 million for Amtrak for 2004. The full committee later boosted Amtrak's appropriation to \$900 million, the amount requested by the Bush Administration.⁹ That figure is about half of Amtrak's own request.

9. The Transportation, Treasury, and Independent Agencies Appropriations Act, 2004, H.R. 2989.

A Brief History of Amtrak

Intercity passenger rail service has long faced significant challenges in its efforts to compete with other modes of transportation. Between the 1920s and the beginning of World War II, train ridership (measured in annual passenger-miles) declined markedly as automobiles proliferated.¹ During the war, rail travel surged as government rationing of fuel and other materials critical for the war effort curtailed automobile use.² At that time, the number of miles traveled by passengers on intercity railroads soared to an average of nearly 67 billion per year, compared with an annual average of 19 billion in the previous five-year period (1936-1940). After the war, however, the number of passenger-miles traveled by rail subsided again and began a long decline (*see Figure 3*).

In 1971, the year Amtrak began service, the number of intercity rail passenger-miles traveled was down to a mere 4.4 billion. Since then, it has fluctuated within the range of about 4.2 billion to 6.4 billion passenger-miles per year.

The total number of intercity rail passengers—a less revealing measure since it ignores the distance traveled—has ranged from 17 million in the early 1970s to 23.5 million in 2001.

Financial Difficulties Leading to the Creation of Amtrak

In the two decades that preceded the establishment of Amtrak, the railroad industry—which at that time provided both freight and passenger service—faced mounting financial problems. The expansion of alternative travel options diminished the demand for passenger rail service. In addition, the railroads' bread-and-butter freight service suffered as the railroads were caught with high fixed costs from which they could not easily escape in the face of new competition from truckers. Rigid regulation of both passenger and freight service by the Interstate Commerce Commission (ICC) compounded the railroads' problems by virtually eliminating their ability to adapt to changing market conditions.

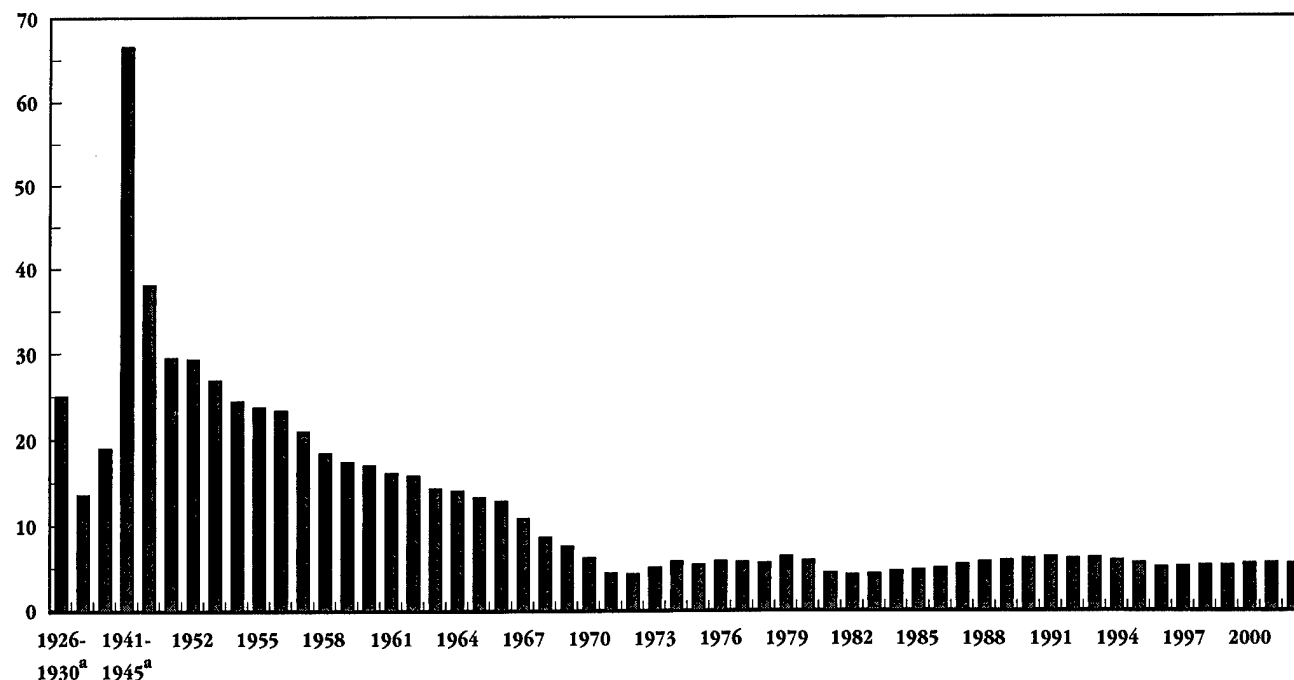
Alternative Travel Options

The confluence of several events contributed to the decline in railroad ridership in the 1950s and 1960s. Returning war veterans took advantage of subsidized mortgage programs to buy homes for their young and growing families. Suburbs sprouted, often located far from central-city train stations and lacking convenient public transportation—a development that both necessitated automobile ownership and was enabled by it.

1. One rail expert has suggested that passenger rail probably reached its peak in terms of intercity travel in the mid-1890s, when its share of the market was estimated to be about 95 percent. See George W. Hilton, *Amtrak: The National Railroad Passenger Corporation* (Washington, D.C.: American Enterprise Institute, 1980), p. 2. A passenger-mile is the movement of one passenger the distance of one mile.
2. In this study, "travel" refers to intercity (between metropolitan areas) travel unless otherwise noted. "Transit" refers to local travel (within a metropolitan area).

Figure 3.**Intercity Railroad Passenger-Miles, 1926 to 2002**

(Billions)



Source: Congressional Budget Office based on data from the Association of American Railroads, the Eno Transportation Foundation, Amtrak, and the National Association of Railroad Passengers.

a. The first five bars in the table show five-year annual averages (1926-1930, 1931-1935, 1936-1940, 1941-1945, and 1946-1950); the subsequent bars show annual totals, beginning in 1951 and running through 2002.

At the same time, improved highways facilitated travel by car and bus. The massive federal program to build the Interstate Highway System began in 1956 and during the next two decades completed more than 42,000 miles of high-quality, multiple-lane, limited-access superhighways.³ That road network helped make car trips faster, cheaper, and more convenient than train travel.

In addition, business travelers turned increasingly to airlines for long-distance trips in the postwar period. By 1960, air carriers provided 31 billion passenger-miles of travel, compared with 17 billion passenger-miles for rail (see Table 1). A decade later, air carriers accounted for 108 billion passenger-miles, and rail carriers accounted for just

6 billion. In the years that followed, air travel continued to soar while rail travel stagnated. Like the Interstate Highway System, the aviation system benefited from federal spending (in this case, on airports, the air traffic control system, and other investments).⁴

Policymakers made several attempts to address the declining financial condition of the railroad industry in general and of passenger service in particular. Yet even 40 years ago, some analysts had deduced that fundamental economic factors were making that decline inevitable and irreversible. For example, in 1961, a commission estab-

3. Department of Transportation, Federal Highway Administration, *Highway Statistics 1976*, Table INT-11, p. 141. By 2000, the system stretched more than 46,000 miles.

4. Federal spending on highways and aviation has been financed in large part from taxes imposed on users of those systems, whereas subsidies for intercity passenger rail have come primarily from the general fund of the Treasury. Local commuter rail service receives subsidies from the transit account of the Highway Trust Fund, which is financed from taxes on highway users.

Table 1.**Domestic Intercity Travel by Rail, Air, and Bus, Selected Years, 1960 to 2000**

(Billions of passenger-miles)

	1960	1970	1980	1990	2000	Percentage of 2000 Total
Air Carriers	31.1	108.4	204.4	345.9	516.1	92.2
Railroads	17.1	6.2	4.5	6.1	5.5	1.0
Buses	<u>19.3</u>	<u>25.3</u>	<u>27.4</u>	<u>23.0</u>	<u>37.9</u>	<u>6.8</u>
Total	67.5	139.9	236.3	375.0	559.5	100.0

Source: Congressional Budget Office based on rail and air carrier data from Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics 2002*, Table 1-34, and bus data from Rosalyn A. Wilson, *Transportation in America, 2001*, 19th ed. (Washington, D.C.: Eno Transportation Foundation, 2002), p. 45. CBO used the Eno Foundation report for bus data because the Bureau of Transportation Statistics data include transit (intrametropolitan) passengers as well as intercity bus passengers. The Eno numbers include charter-bus passengers as well as those on scheduled intercity buses. The largest intercity bus company, Greyhound Lines, accounted for about 8 billion passenger-miles of scheduled service in 2000. Even if that number was used as a lower bound, Amtrak would still account for only 1 percent of passenger-miles.

lished by the Senate Commerce Committee to study national transportation policy concluded:

Railroad intercity passenger service meets no important needs that cannot be provided for by other carriers and possesses no uniquely necessary service advantages. It serves no locations which cannot be adequately served by air and highway.⁵

The Financial Decline of Rail Service

During the 1950s and 1960s, railroads experienced increasing difficulty with their freight business as well as with their passenger service. Just as the Interstate Highway System made travel by private automobile increasingly attractive, it also improved the viability of long-distance trucking. At the same time, strict regulation by the Interstate Commerce Commission of rail rates, routes, and service hampered the railroads' ability to respond nimbly to competition from other modes of transportation.

Railroad officials argued that their passenger service was a primary contributor to their financial woes and that if they could eliminate such service, they would become profitable again. Some economists disputed that contention, but the fact that a railroad's passenger and freight

service shared common costs made it difficult to see exactly where the railroad was losing money.⁶ Regardless of whether passenger service was actually a money loser, the beleaguered railroads thought it was and made improving it a low priority.⁷ As a result, the quality of passenger service generally declined.

If the railroads had been earning large profits on their freight traffic, they might have been able to afford to continue offering passenger service. But by the 1960s, railroads were finding it increasingly difficult to compete with trucks—especially in the Northeast, where manufacturing activity was strong. To keep from losing business to truckers, they needed to be able to reduce the rates they charged on high-value shipments, such as manufactured

5. U.S. Congress, Special Study Group on Transportation Policies, *The Doyle Report: National Transportation Policy* (June 1961), p. 322.

6. See Donald M. Itzkoff, *Off the Track: The Decline of the Intercity Passenger Train in the United States* (Westport, Conn.: Greenwood Press, 1985), p. 53. The same problem that made it hard to distinguish between the costs of freight and passenger service before 1970 applies today in attempting to allocate the costs of passenger service among different routes.

7. During the 1950s and early 1960s, some railroads did invest in new passenger cars. For example, the Santa Fe Railway bought cars for its premier Super Chief service, and those cars became an important part of Amtrak's long-distance fleet in the 1970s and 1980s.

goods, a market in which trucking was making inroads.⁸ The ICC prevented the railroads from doing that, however, and instead tried to maintain a regulated rate structure in which revenues from high rates on high-value shipments cross-subsidized shipments that had low value per ton, such as coal and agricultural goods. That system of cross-subsidization eventually proved unsustainable because shippers facing high rail rates could use trucks instead of trains.

Some observers thought the solution to the freight railroads' financial problems was for them to merge into larger, stronger entities. By eliminating competition and duplication of business activities, that argument ran, the railroads could cut costs.⁹

In 1957, the two largest railroads in the country, the Pennsylvania Railroad and the New York Central, announced that they were considering a merger. Their leaders thought that merging could improve the railroads' efficiency, especially if it allowed them to eliminate excess capacity in their region caused by stiff competition from truckers. The merger was finally approved by the boards and stockholders of both companies in 1962, but it took another six years of ICC proceedings—and maneuvering to respond to opposition by labor unions, state and local governments, and other opponents—before the two railroads could complete their deal, forming the Penn Central in 1968. Contrary to expectations, the merger did not shore up the financial condition of the railroads. The Penn Central struggled to meld two very different corporate cultures in an already difficult economic environment, and in 1970 it filed for bankruptcy—at the time, the largest corporate bankruptcy in U.S. history.¹⁰

8. The problem in the Northeast also reflected the nature of transportation in that region. For short hauls, trucks tend to have an economic advantage over rail.

9. The ICC appeared even more reluctant to let railroads discontinue freight service and abandon tracks than it was to allow flexibility in rates. As a result, not until some northeastern railroads went bankrupt in the 1970s were policymakers convinced that requiring railroads to provide uneconomic service would ultimately lead to no service at all.

10. For a full and entertaining account of the creation and dissolution of the Penn Central, see Joseph R. Daughen and Peter Binzen, *The*

Fearful that losses from passenger service would contribute to the weakening of other railroads, policymakers looked for a way to relieve the freight railroads of that burden. The result was the passage of the Rail Passenger Service Act of 1970, which created Amtrak. The company began operating on May 1, 1971.

Amtrak from 1970 to 1997

When Amtrak was formed, its creators said they expected the company to become self-sufficient and operate as a private entity without subsidies within a few years. The Secretary of Transportation, John Volpe, was quoted as saying that Amtrak "could be profitable within perhaps three years."¹¹ Whether its supporters really thought that Amtrak could achieve self-sufficiency or whether the claim was a tactic used by people wanting to preserve passenger service or by freight railroads wanting to get rid of their unprofitable passenger operations is a question for historians. At the time, however, the Office of Management and Budget argued against the federal takeover of passenger rail service on the grounds that it could not become profitable and would continue to need federal subsidies. Despite that objection, Amtrak was capitalized with a federal grant of \$40 million, federal loan guarantees of \$100 million, and contributions from the railroads of equipment and \$197 million in cash.¹²

The 1970s and 1980s were characterized by ambivalence among policymakers and observers about appropriate federal policies toward Amtrak. One scholar described the ambivalence as follows:

Wreck of the Penn Central (Washington, D.C.: Beard Books, 1999), p. 18. (The book was originally published by Little, Brown; Boston, 1971.)

11. Robert Lindsay, "Nixon Drafts Bill for Body to Run Passenger Trains," *New York Times*, January 19, 1970, p. 43, as quoted in Itzkoff, *Off the Track*, p. 94. That assertion may have been premised on the assumption that Amtrak would shed most of its unprofitable routes and maintain service in only a few densely traveled corridors.

12. Hilton, *Amtrak*, p. 17. Section 401(a)(2) of the Rail Passenger Service Act of 1970 required the railroads to contribute cash or equipment in return for being relieved of the obligation to provide passenger service. The contributions occurred over a three-year period.

The Nixon administration reluctantly supported the creation of Amtrak and Conrail because it believed that “quasi-private” corporations offered the minimum financial involvement that would be politically viable, while providing sufficient executive control to minimize future demands. Congressional opponents of cutbacks in service, on the other hand, saw “quasi-public” corporations as a means of ensuring that rail policy would not be dominated by a budget-conscious executive.¹³

It soon became evident that Amtrak would be guided by politics as much as by business decisions. The differences in views and the complexity of the issues involved made a workable compromise between politics and business elusive. As a result, many issues that went unresolved in the 1970s remain unresolved. Indeed, the current debate about the future of passenger rail is remarkably reminiscent of the policy disputes of the 1970s. The issues surrounding the appropriate federal role in passenger rail—such as the size of subsidies and whether to attach strings to ensure that federal aid goes toward achieving federal goals—are still being debated today.

Early Legislation

The early 1970s saw enactment of nearly annual legislation to address problems that arose in the establishment, operation, and funding of the national passenger rail system. The first law to amend the 1970 statute that created Amtrak was enacted in June 1972, less than 14 months after the company began service. Among other things, it required Amtrak to make monthly reports to the Congress on the revenues and expenses of each train, each route, and the entire system, as well as on their number of passengers and on-time performance record. The 1972 law also authorized an additional \$265 million in appropriations and another \$200 million in loan guarantees and made Amtrak subject to the Freedom of Information

Act.¹⁴ The legislation reflected the fact that Amtrak was not faring as well as had been hoped and that more federal support would be necessary to keep it running.

Legislation enacted the following year, the Amtrak Improvement Act of 1973, authorized an additional federal subsidy of \$334.3 million.¹⁵ It also increased the authorized amount of outstanding loan guarantees to \$500 million. At the same time that the Congress was considering that legislation, it was also wrestling with the problems of freight railroads. The Regional Rail Reorganization Act of 1973 (known as the 3R Act) established the Consolidated Rail Corporation (Conrail) to assume the assets, routes, and service of the Penn Central and other bankrupt railroads in the Northeast. The 3R Act set the stage for Amtrak to take over the rights of way, tracks, and facilities between Boston and Washington, D.C.—an area called the Northeast Corridor. That takeover was subsequently accomplished through passage of the Railroad Revitalization and Regulatory Reform Act of 1976 (the 4R Act).¹⁶

Among other things, the 4R Act provided about \$85.2 million for Amtrak to acquire the Northeast Corridor property. Legislation enacted eight months later (the Amtrak Improvement Act of 1976) raised that amount to \$120 million and authorized the Secretary of Transportation to enter into a mortgage agreement with Amtrak.¹⁷ In light of current proposals to separate infrastructure in the corridor from operations, it is worthwhile to note that Amtrak did not own any of its track until that transfer. That fact suggests that separating infrastructure from pas-

14. More specifically, that law, the Amendments of June 22, 1972, to the Rail Passenger Service Act of 1970, provided an additional \$40 million for fiscal year 1971 and \$225 million for subsequent years, to be available until spent. It authorized the Secretary of Transportation to guarantee loans not to exceed \$150 million outstanding before July 31, 1973, and not to exceed \$200 million outstanding after that date.

15. Those funds were to be available until spent.

16. Section 701(b) of the 4R Act (90 Stat. 121) provided for the sale or lease to Amtrak of all rail properties designated as part of the “final system plan” for the Northeast Corridor under the 3R Act.

17. Section 217 of that legislation (90 Stat. 2627) contains the provision about the purchase of the Northeast Corridor property, which was to occur over eight years, and the mortgage on it.

13. R. Kent Weaver, *The Politics of Industrial Change: Railway Policy in North America* (Washington, D.C.: Brookings Institution, 1985), p. 88. Conrail (officially the Consolidated Rail Corporation) was created from the remains of bankrupt railroads in the Northeast.

senger operations would be feasible in the Northeast Corridor—as it is in the rest of the country—although it does not indicate what the optimal configuration would be.

The following year, 1977, saw a break in the pattern of annual legislation that from 1972 to 1976 had provided more federal funding for Amtrak and made various changes to its structure and operations. But that temporary lull was followed by important changes in the period from 1978 through 1981.

Amtrak Improvement Act of 1978

By 1978, the Congress had apparently given up on the notion that Amtrak could become profitable and free of federal subsidies. The Amtrak Improvement Act of 1978 amended Amtrak's statute to provide that the company be "operated and managed as a for-profit corporation" instead of the original "shall be a for-profit corporation."¹⁸ But the Congress had not lost hope in Amtrak's ability to improve service: it set a goal for the railroad to provide service between Boston and New York City in 3 hours and 40 minutes and between New York and Washington, D.C., in 2 hours and 40 minutes.¹⁹ Amtrak substantially achieved that goal two decades later with the introduction of its Acela Express trains.

The 1978 law required the Secretary of Transportation to develop recommendations for "an optimal intercity railroad passenger system, based upon current and future market and population requirements."²⁰ In studying the system, the Department of Transportation (DOT) was to compute, among other things, "the costs in loss or profit per passenger mile" and "an estimate of operating and capital appropriations required to operate the system for fiscal years 1980 through 1984," indicating the Congress's expectation that Amtrak would continue to need

federal subsidies. In addition, the 1978 law required DOT to evaluate and recommend to the Congress whether Amtrak's common stock should be retained, retired, or converted.²¹

Amtrak Reorganization Act of 1979

Legislation enacted in 1979 foreshadows the themes of the Amtrak Reform and Accountability Act of 1997 and exemplifies the ambivalence of policymakers toward Amtrak. Suggesting a need to provide better incentives for the company's board, management, and workers and for the states, the Congress concluded that:

- "Inadequately defined goals for the Corporation [Amtrak] have denied its board of directors an effective role in guiding the Corporation or in promoting and increasing the number of intercity rail passengers";
- "Uncertain goals and financial commitment have discouraged the development of effective corporate management";
- "Uncertainty arising from the lack of specific goals has made the achievement of high employee morale difficult"; and
- "State participation in subsidizing interstate rail passenger service has, for the most part, been unworkable."²²

Among the goals set forth in the 1979 law were improving on-time performance, implementing schedules that would provide a systemwide average speed of at least 55 miles per hour, and generating enough revenues to cover at least

18. Section 11 of the Amtrak Improvement Act of 1978 (92 Stat. 928).

19. That goal had initially been set in section 703 of the 4R Act and was to be achieved within five years of that law's passage in 1976. The 1978 law made \$27 million of the amount authorized under the 4R Act available for electrification of the Northeast Corridor. Over the years, the federal government provided about \$4 billion to accommodate faster trains in the corridor.

20. Section 4 of the Amtrak Improvement Act of 1978 (92 Stat. 924).

21. Amtrak's common stock was—and still is—held by four railroads (or their successors) that contributed assets during the formation of the company. Railroads contributing assets to Amtrak were given a choice between writing the contributions off as a business expense on their income tax returns or receiving common stock. Four railroads were in such bad financial condition that the tax write-off would not have had any value, so they took the common stock instead. Section 415 of the 1997 Reform Act required Amtrak to redeem all of its common stock at fair market value by October 1, 2002, but that has not yet happened.

22. Section 102 of the Amtrak Reorganization Act of 1979 (93 Stat. 537).

50 percent of operating expenses, excluding depreciation, within six years (and at least 44 percent within three years). But in the tradition of ambivalence about Amtrak's role, at the same time that the Congress set the goal of increasing the ratio of revenues to expenses, it also required Amtrak to establish a reduced-fare program for elderly and handicapped passengers. In short, Amtrak was supposed to act like both a business and a public-service agency.

The 1979 legislation also directed Amtrak to develop and submit to the Congress and the President an "operational improvement program," which was to include:

- "A zero-based assessment of all operating practices and implementation of changes to achieve the minimum use of employees consistent with safe operations and adequate service";
- "A systematic program for optimizing the train size to passenger demand"; and
- "Adjustment of purchasing and pricing of food and beverages to achieve . . . a continuing reduction in losses associated with food and beverage services with a goal of ultimate profitability."²³

In addition, Amtrak was required to establish a "performance evaluation center" and to make various reports on service, maintenance, and other matters. For example, the company was ordered to submit annual reviews of each long-distance route to the Congress.

Some observers would say that such specificity constituted micromanagement that would interfere with Amtrak's ability to make market-based business decisions. Other people would argue that in view of the sizable federal subsidies paid in the past and expected for the foreseeable future, the Congress and the President were only acting prudently in trying to protect the federal government's investment in Amtrak.

The 1979 law authorized appropriations of \$630.9 million for 1980 and \$674.9 million for 1981 for operating ex-

penses and \$203 million for 1980, \$244 million for 1981, and \$254 million for 1982 for capital expenses. In addition, it authorized nearly \$220 million over the 1980-1982 period for commuter service, for workers who lost their jobs or were reassigned to lower-paying jobs, and for payment of the principal of obligations guaranteed by the federal government.

Amtrak Improvement Act of 1981

By 1981, it was clear that large federal subsidies would be needed for improvements along the Northeast Corridor as well as for operations throughout Amtrak's system. In return for federal financial assistance, Amtrak was directed in the Amtrak Improvement Act of 1981 to issue preferred stock to the Secretary of Transportation.²⁴ That issuance gave the federal government an ownership stake in Amtrak for the first time, although the company had been treated as a hybrid quasi-public corporation since its inception.

The 1981 law also made changes to Amtrak's board of directors. It reduced the size to nine members and modified the composition to consist of the Secretary of Transportation (acting ex officio); the president of Amtrak; three members appointed by the President and confirmed by the Senate, who were to be selected from lists generated by railway labor, state governors, and business, respectively; two members selected by commuter authorities; and two members selected by preferred stockholders.²⁵ Throughout Amtrak's history, the accommodation of political interests has been a more important factor than business experience in the selection of board members.

During the 1980s and early 1990s, the Congress continued to provide annual subsidies for Amtrak but did not make major changes in policy. As Amtrak's ridership stabilized at about 5 billion to 6 billion passenger-miles and 20 million passengers annually, so did its financial condition. However, both opponents of federal subsidies

23. Section 106 of the Amtrak Reorganization Act of 1979 (93 Stat. 539).

24. That act was subtitle F of the Omnibus Budget Reconciliation Act of 1981.

25. With that change, the holders of Amtrak's common stock lost their seats on the board and their voting rights. Although 17 directors had been authorized by earlier legislation, the board had never had more than 13 voting members.

and supporters of increased investment in passenger rail continued to press their cases.

In 1997, the deputy federal railroad administrator told a conference on the future of passenger rail that "in 1994, the Department of Transportation and Amtrak's Board of Governors committed to the goal of eliminating Amtrak's dependence on Federal operating subsidies, while improving service and preserving a national system. The Administration has led with substantial capital requests for Amtrak, and over the past four years the total Federal capital investment in Amtrak has exceeded that for the previous decade combined."²⁶ He went on to say, however, that "there should be no expectation that Amtrak can be viable with a one-time, five-year infusion of capital. . . . The capital commitment must be stable and ongoing."²⁷

The Amtrak Reform and Accountability Act: 1997 to 2002

In 1997, the Congress and the President enacted a law requiring Amtrak to run without federal operating subsidies by December 2002. To help the company achieve that goal (referred to as operating self-sufficiency), the Amtrak Reform and Accountability Act gave Amtrak greater freedom to make business decisions than it had previously had. For example, the law repealed a requirement that had locked Amtrak into a route structure established in 1971 and allowed Amtrak to eliminate routes after providing 180 days' notice. That change was intended to let the railroad cut money-losing routes that were draining its resources.

26. Donald M. Itzkoff, "Perspective of the Federal Railroad Administration" (comments made at the June 1997 National Conference on Critical Issues for the Future of Passenger Rail), published in Transportation Research Board, *National Conference on Critical Issues for the Future of Intercity Passenger Rail*, Transportation Research Circular No. 484 (Washington, D.C.: National Research Council, March 1998), p. 60.

27. *Ibid.*, p. 61. Itzkoff reported that Amtrak had cut its reliance on federal subsidies from nearly \$400 million to \$222 million in just two years and added, "We believe that the goal of a zero operating subsidy is important, because it has already driven Amtrak to expand its entrepreneurial initiatives through the strategic business units."

The 1997 Reform Act also gave Amtrak flexibility to make other cost-cutting changes. It repealed statutory labor-protection provisions that had required Amtrak to provide up to six years' pay and benefits to employees who lost their jobs when Amtrak discontinued service (or cut it to fewer than three trains a week) on a route.²⁸ It also repealed a statutory provision that had prohibited Amtrak from contracting for any work other than food and beverage service if such contracting would result in the layoff of even a single employee in a bargaining unit. Labor protection and contracting out became matters for collective bargaining.

In addition to provisions that laid the groundwork for Amtrak to operate on a more businesslike basis, the Reform Act authorized appropriations totaling about \$5.2 billion for 1998 through 2002. Enactment of the law also triggered access to about \$2 billion in funds from the Taxpayer Relief Act of 1997.²⁹ Those funds were expected to help Amtrak make the investments needed to get on a solid financial footing.

Amtrak's Response to the Reform Act

Amtrak's leadership found it difficult, however, to adopt the cost-saving measures that were authorized in the Reform Act. When the chief executive officer, Thomas Downs, attempted to negotiate new labor agreements that would give the company greater flexibility in reducing costs, Amtrak's board reportedly forced him out of office.³⁰ His successor, George Warrington, left the company's

28. Specifically, Amtrak had been required to give one year of pay for each year of service to any employee whose job was terminated because a route was eliminated or because service on the route dropped below three trains a week. Those provisions were known as the C-2 provisions, the number of the appendix to Amtrak's 1973 labor agreement. That agreement was entered into under a statutory mandate that became codified as 49 U.S.C. 24706(c). Section 142 of the Reform Act repealed 49 U.S.C. 24706(c).

29. Section 977(f) of the Taxpayer Relief Act of 1997 prohibited the Secretary of the Treasury from paying any tax refunds allowed by the act until legislation authorizing reforms of Amtrak had been enacted.

30. James A. Dunn Jr., *Driving Forces: The Automobile, Its Enemies, and the Politics of Mobility* (Washington, D.C.: Brookings Institution, 1998), p. 123.

Table 2.**Amtrak's Revenues and Expenses, 1997 to 2001**

(Millions of dollars)

	1997	1998	1999	2000	2001	Change, 1997 to 2001	
						Millions of Dollars	Percent
Revenues ^a	1,669	2,244	2,011	2,111	2,109	440	26.4
Expenses	2,359	2,548	2,660	2,876	3,288	929	39.4
Operating Loss	690	304	649	765	1,179	489	70.9

Source: Congressional Budget Office based on data from Amtrak's annual reports.

a. Excluding federal subsidies.

difficult labor issues to be resolved by an arbitrator, who ultimately prescribed only slightly less onerous labor protection than before: maximum pay protection of five years instead of six and a more gradual scale relating years of service to pay protection.³¹ In the absence of greater flexibility in labor-protection provisions, it remained costly for Amtrak to discontinue service (or cut back to fewer than three trains a week) on a money-losing route, thereby reducing the company's ability to take business actions that could decrease its losses. In addition, Amtrak did not take advantage of the removal of the statutory prohibition on contracting out work to other businesses that might have been able to operate more efficiently.

In other areas, Amtrak took a more aggressive approach to meeting the goal of self-sufficiency. In retrospect, some of those actions were ill-advised, however. To reduce losses, the company needed to increase revenues, decrease expenses, or both. Amtrak's leaders decided to focus on the revenue side, hoping that growth in revenues would exceed growth in expenses by enough that the railroad could show self-sufficiency on an operating basis.³² Amtrak's annual revenues rose by \$440 million between 1997 and 2001, but its costs rose by far more, \$929 million, thus increasing the company's operating loss (see Table 2).

To make rail service more attractive to travelers in the potentially lucrative Boston-New York-Washington, D.C., market, Amtrak invested about \$3 billion in rail service in the Northeast Corridor. It ordered new high-speed trains, which it called Acela Express, and it electrified the right of way between New Haven and Boston to cut travel time between Boston and New York. Both projects experienced schedule delays and cost overruns, but the Acela trains are now operating.³³

In its quest to increase revenues, Amtrak also explored business lines other than passenger service. It substantially expanded mail and express service, and revenues from those activities grew from \$70 million in 1997 to \$117 million in 2001.³⁴ However, the costs of transporting express shipments (generally, small packages that need to get to their destination quickly) were significant, in part because that service required special freight cars. Amtrak's foray into freight transportation had additional disad-

33. In August 2002, Acela trains were taken out of service to fix cracks in the brackets that hold their yaw dampers in place. (The dampers keep trains from swaying.) As the problems were addressed, Amtrak put the Acela trains back into service. More recently, in March 2003, Amtrak again pulled a number of Acela trains out of service because of maintenance problems.

34. Statement of Kenneth M. Mead, Department of Transportation Inspector General, "Amtrak's Performance, Budget, and Passenger Rail Service Issues," before the Subcommittee on Transportation and Related Agencies of the House Committee on Appropriations, February 27, 2002, p. 10. That rapid growth was substantially less than Amtrak had projected, however. It had projected revenues from those activities of \$181 million in 2001 and \$400 million by 2003.

31. The minimum-service trigger of three trains a week was retained.

32. "Operating self-sufficiency" was not defined in the Reform Act. The definition that came to be agreed on used a cash basis in which depreciation was not counted as an expense.

vantages: it diverted resources from the replacement of passenger equipment (except the acquisition of Acela trains); antagonized some freight railroads, which feared diversion of profitable traffic; and hampered passenger operations with delays caused by switching freight cars after trains had departed terminals with passengers on board. Amtrak reported losing about \$3 million a year on its freight service.³⁵ In September 2002, Amtrak's new management announced that the company would discontinue express service, although it would continue to carry mail.³⁶

Growing Debt

Although Amtrak Chief Executive Officer George Warrington continued until February 2002 to assure the Congress that Amtrak was steadily moving toward operating self-sufficiency, the company was covering its costs through increasing debt.³⁷ Indeed, Amtrak had embarked on a borrowing binge between 1997 and 2001, incurring new debt of about \$2.7 billion, thus boosting its total outstanding debt to \$4.4 billion.³⁸ In 2000, Amtrak sold and leased back some of its fleet of trains to raise \$124 million in cash, and in 2001, it mortgaged portions of Penn Station in New York City to raise enough cash to continue operating until it received an infusion of federal aid at the beginning of fiscal year 2002.³⁹ Nevertheless, during the 1998-2001 period, the President's annual budget submissions never requested more than 60 percent of the amount authorized for Amtrak under the Reform Act, nor did

Amtrak appeal directly to the Congress for full funding, as it was permitted by law to do.

Compounding Amtrak's problems was the fact that in the mid-1990s, the company had embarked on a program of improving its fleet of railcars and locomotives, through both new purchases and major overhauls. That effort not only increased the amount of outstanding debt but also raised annual depreciation and interest expenses. Although depreciation was not counted in determining whether Amtrak met the test of operating self-sufficiency, interest was.⁴⁰ The cost of paying interest on the company's debt skyrocketed from \$74 million in 1997 to more than \$250 million in 2003.⁴¹

The 2002 Bailout

By 2002, Amtrak had exhausted its ability to borrow. Nearly all of its assets had been used as collateral for loans. Moreover, its access to short-term loans was cut off because Amtrak was unable to get auditors to approve its annual financial statement. In the midst of that financial crisis, George Warrington resigned from his position as president and chief executive officer in the spring of 2002 and was replaced by David Gunn. Mr. Gunn scrutinized Amtrak's finances and determined that the company would need a federal bailout to keep from shutting down in July.

35. Amtrak spokesman Bill Schulz, as quoted in Laurence Arnold, "Amtrak Proposes Collecting More from States," *Associated Press Newswire*, September 19, 2002.

36. Don Phillips, "Amtrak Chief Proposes More Cuts: Budget Plan for '03 Ends Freight Service," *Washington Post*, September 19, 2002, p. E1.

37. George Warrington left Amtrak in April 2002. Amtrak's rosy assessments were not shared by the General Accounting Office, whose reports between 1998 and 2001 painted increasingly bleak pictures of Amtrak's finances.

38. Statement of Kenneth M. Mead, Department of Transportation Inspector General, "Amtrak's Financial Condition," before the Subcommittee on Transportation and Related Agencies of the Senate Committee on Appropriations, June 20, 2002, p. 2.

39. *Ibid.*, p. 3.

40. The Reform Act was silent on the treatment of depreciation. Accountants generally consider depreciation an operating expense. Thus, the fact that the act required Amtrak to achieve *operating* self-sufficiency but said nothing about capital contributed to confusion. The purpose of depreciation is to account for the consumption of capital and the eventual need to replace it. If Amtrak was not going to have to cover its capital costs—and the operating self-sufficiency requirement implied that it might not have to cover at least some of them—then not counting depreciation might be appropriate.

41. Department of Transportation, Office of the Inspector General, *2001 Assessment of Amtrak's Financial Performance and Requirements*, Report No. CR-2002-075 (January 24, 2002), p. 7 (for the 1997 number); and Amtrak, "Amtrak Recommends \$1.8 Billion Federal Operating and Capital Investment Grant for Fiscal Year 2004" (news release, February 20, 2003), available at www.amtrak.com/press/atk20030220028.html (for the 2003 number).

Faced with the threat of a shutdown—which could have serious consequences for passengers of commuter railroads as well as those of Amtrak—the Bush Administration put together a loan of \$100 million under an existing program for financing rail infrastructure.⁴² That loan kept the rail-

42. That loan program is the Railroad Rehabilitation and Improvement Financing program, authorized initially under the 4R Act of 1976 and revised most recently in 1998 by the Transportation Equity Act for the 21st Century.

road running over the Fourth of July weekend. After the Congress returned from its holiday recess, it passed a supplemental appropriation of \$205 million to keep Amtrak operating through the rest of the fiscal year.

Today, having received a total of about \$27 billion in federal subsidies over 32 years, Amtrak is still teetering on the edge of bankruptcy, and policymakers are still struggling to find a workable plan for intercity passenger rail.

3

Amtrak's Role in Intercity Passenger Transportation

The primary goal of any passenger transportation system is to provide mobility (that is, to enable people to move from place to place). Lesser, but important, goals are safety, reliability, speed, convenience, and comfort. Apart from enthusiasts who enjoy a particular mode of transportation for the ride, travelers generally do not view transport as an end in itself. Rather, it is a means to an end, such as conducting business, visiting relatives and friends, or seeing new places.

Several measures can be used to indicate the mobility that a transportation service provides. Those measures include the number of passengers served, the number of passenger-miles traveled, the number of places served, and the number of miles of route. By any of those measures, Amtrak's role in providing mobility is very small, except in the Northeast Corridor.

Recent Trends in Amtrak's Ridership

During the 1991-2002 period, Amtrak's ridership was relatively stable. The number of passenger-miles traveled ranged from 5.1 billion to 6.3 billion a year and averaged about 5.6 billion (*see Figure 3 on page 6*). The total number of passengers ranged from 19.7 million to 23.5 million annually, averaging 21.6 million (*see Figure 4*).

During that time, the number of passengers peaked in 2001, the next to last year of the period, but the number of passenger-miles peaked in 1991, the first year of the period. Consistent with that difference, the average trip

length (calculated by dividing passenger-miles by passengers) declined continuously throughout the period, from about 286 miles in 1991 to 235 miles in 2002.

Amtrak's Role Nationwide

As noted earlier, Amtrak accounted for only 1.0 percent of the intercity passenger-miles traveled by commercial carrier in 2000 (*see Table 1 on page 7*). The railroad's 5.5 billion passenger-miles that year pale in comparison with the 516.1 billion traveled on airlines (92.2 percent of total intercity passenger-miles on commercial carriers) and the 37.9 billion traveled on buses (6.8 percent of the total). Travel by private automobile reigned supreme, however, accounting for more than 2.5 trillion passenger-miles in 2000.

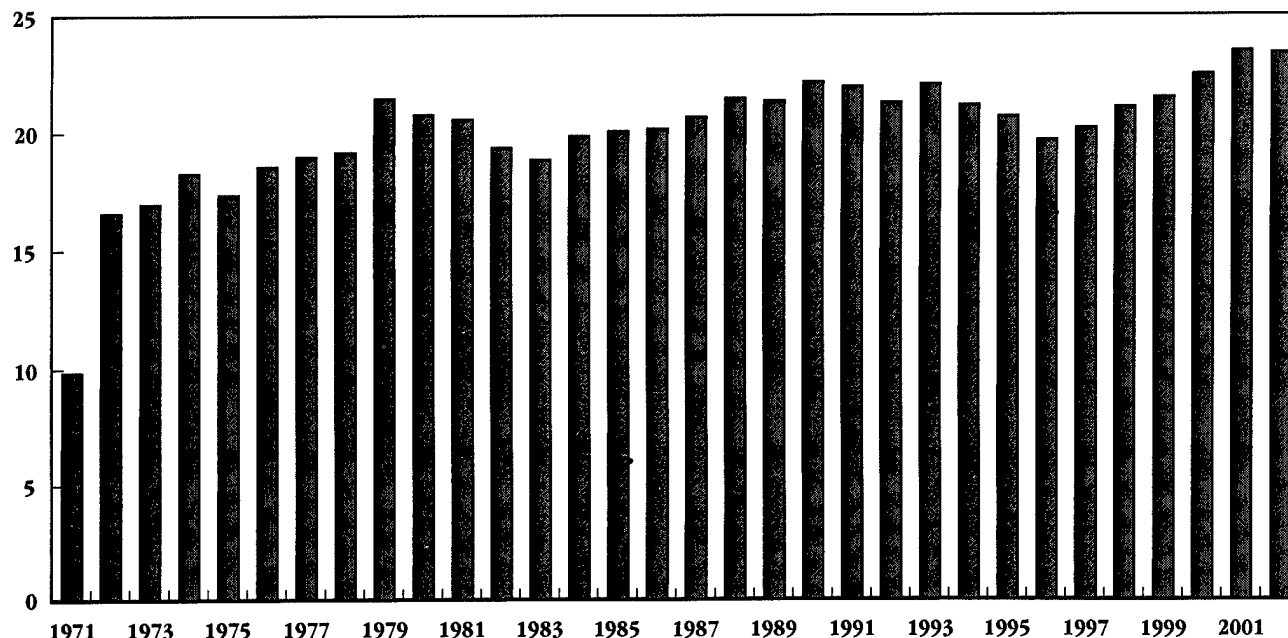
In terms of numbers of passengers, Amtrak served a scant 2.3 percent of domestic intercity passengers traveling by commercial carrier in 2000. The railroad carried 23 million passengers that year, compared with 611 million passengers on commercial airlines (61.2 percent of the total) and 365 million on intercity buses (36.5 percent).¹

In geographical coverage, Amtrak appears only slightly better relative to other modes of transportation. It serves more than 500 stations in 46 states, compared with 546

1. Rosalyn A. Wilson, *Transportation in America 2001*, 19th ed. (Washington, D.C.: Eno Transportation Foundation, 2002), p. 46.

Figure 4.**Number of Amtrak Passengers, 1971 to 2002**

(Millions)



Source: Congressional Budget Office based on data from the Association of American Railroads, the Eno Transportation Foundation, and Amtrak.

airports that the Federal Aviation Administration classifies as “commercial service” airports (those having more than 2,500 passenger boardings per year).² In comparison, Greyhound serves about 2,600 points, of which 112 are company-owned terminals.³ Other bus companies serve

additional points, although Greyhound dominates scheduled intercity bus service.

Regional Differences in Amtrak’s Role

Although national totals provide an overall indication of Amtrak’s role in passenger transportation, they mask important regional variations. Passenger ridership differs greatly among the states. The number of passengers boarding Amtrak trains in 2000 ranged from 925 in New Hampshire (equivalent to three a day) to nearly 5 million in New York State (equivalent to more than 13,000 a day).⁴ Of the top 10 states in terms of passenger boardings, five were in the Northeast Corridor.⁵ California and Illi-

2. Information on airports comes from Department of Transportation, Federal Aviation Administration, *2001-2005 National Plan of Integrated Airport Systems (NPIAS)* (August 28, 2002), p. 4, available at www.faa.gov/arp/planning/npias/index.cfm. Of the 546 commercial service airports, 422 have more than 10,000 boardings and are classified by the Federal Aviation Administration as primary airports. A total of 5,314 airports were open to the public in 2001. Information about Amtrak comes from the “Amtrak Facts” page of the company’s Web site, www.amtrak.com/press/amtrakfacts.html. The states that Amtrak does not serve are Alaska, Hawaii, South Dakota, and Wyoming. Amtrak served about the same number of stations in 1984 (510), although the number has fluctuated between 487 and 542 in the interim. See Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics 2000*, Table 1-7.

3. See the Greyhound Corporation fact sheet available at www.greyhound.com.

4. Personal communication to the Congressional Budget Office by a staff member of the former Amtrak Reform Council, May 7, 2002.

5. The five states in the Northeast Corridor were New York, Pennsylvania, New Jersey, Maryland, and Massachusetts (in order of most boardings). In addition, about 3.5 million passengers boarded in Washington, D.C.

nois, both of which have large urban populations, were also in that group, as were Virginia, Washington State, and Florida. Of the 46 states served by Amtrak, the 10 with 70 or fewer passenger boardings per day generally have relatively small populations and population clusters: New Hampshire, Idaho, Kentucky, Arkansas, Utah, Kansas, West Virginia, Nebraska, Tennessee, and Alabama (in order of fewest boardings).

From 1994 to 2000, the number of Amtrak passengers in the Northeast Corridor generally rose, as did the number of passengers in the West.⁶ The number of passengers on trains outside those two regions, by contrast, generally declined.⁷ The number of passenger-miles has shown a somewhat similar pattern, rising substantially in the West

and slightly in the Northeast but generally falling elsewhere.⁸

Amtrak's role in transporting passengers, relative to other modes of travel, is much more prominent in the Northeast Corridor than in the rest of the country. The cities along that corridor provide a relatively high density of population, for which rail transport has an advantage. Amtrak accounts for about 14 percent of all intercity trips (including those by automobile) between Washington, D.C., and New York City and about 47 percent of trips between those cities by rail or air carrier.⁹

6. In 1994, Amtrak began providing information on ridership by business unit—Northeast, West, and Intercity.

7. See Amtrak, *2000 Annual Report* (Washington, D.C.: National Railroad Passenger Corporation, 2001), p. 47.

8. *Ibid.*, p. 46.

9. The percentage of all trips is from Amtrak, *The Northeast Corridor South End Transportation Plan, Washington, D.C., to New York City: Phase II Letter Report*, Report to Congress (Washington, D.C.: National Railroad Passenger Corporation, January 2000), p. 9; the percentage of trips by rail or air is from Tom Ramstack, "Airlines Recovering from 9/11 Slump," *Washington Times*, August 13, 2003, p. C8.

The Basic Economics of Passenger Rail

In a market economy, the interaction between the demand for and the supply of goods and services determines what is produced, how much is produced, and what price is charged. For passenger rail service, the primary economic issue is whether travelers are willing and able to pay a large enough price to cover the costs of providing service. Economic theory and recent experience suggest that passenger rail has its best chance of success in densely populated corridors where cities are located close together. Even if the cost of providing service exceeds what consumers are willing to pay, however, government subsidies for passenger rail service may be justified on the grounds of economic efficiency if passenger rail provides external benefits, such as reducing congestion or pollution.

The Demand for Passenger Rail Service

The amount of a product or service that people are willing to buy generally depends on its price, the prices of substitute or related products, the buyer's income and personal preferences, and other factors. In the case of travel, an influential component of the cost is the value of travelers' time, which people consider part of the price of a trip.

Travel time is especially important in comparisons of rail and air for long-distance trips, because even when airline fares are higher than train fares, the savings in time costs can make air travel much less expensive. For shorter trips, travelers often face a trade-off between highway congestion and access time to rail stations. If traveling to a rail station

or between a station and one's destination takes a long time, the automobile is likely to win out because it goes directly from door to door. However, highly congested roads increase automobile travel time compared with that of trains. The trade-off between access time and line-haul time (the amount of time actually spent traveling on an intercity passenger carrier) helps explain why people going from the greater Washington, D.C., area to the New Jersey suburbs of New York City may opt to use a car, whereas those traveling from downtown Washington to midtown Manhattan prefer taking the train. In general, transportation experts regard the automobile as having the advantage in terms of travel time and convenience for trips of less than 150 miles.¹

Another factor relating to time is the extent to which travelers can use their time in transit productively (a particularly important issue for business travelers) or enjoyably (a consideration for vacation travelers). For short trips, travelers may be able to put their time to more productive uses when riding on a train than when driving. They may also be able to get more work done when taking a train (even though the total travel time is greater) than when taking an airplane if the latter requires a succession of interrupting activities, such as taxi rides and screening at airports. For longer trips, however, the less productive

1. Transportation Research Board, *In Pursuit of Speed: New Options for Intercity Passenger Transport*, Special Report 233 (Washington, D.C.: National Research Council, 1991), p. 7.

access and waiting times associated with air travel would be more than offset by the overall savings in travel time.

Still another element of travel time is waiting time, both scheduled and unscheduled. People taking trains, airplanes, or buses are constrained by the schedules of the carriers. Besides taking account of how long it usually takes to get to the terminal, they must build in a cushion to make sure they get there on time. Whereas a minute makes little difference when traveling by car, it can make hours of difference if a traveler just misses a train, plane, or bus. Thus, frequency of service is important. A carrier that offers hourly service is more attractive (all other things being equal) than one that offers infrequent service.

As for unscheduled time, travelers value reliability—which helps explain why seasoned Northeast Corridor travelers head for the train station in foggy weather, when they anticipate delays in airline service but not in rail service. If given the choice between transportation that reliably takes 3.5 hours and an alternative that has an equal probability of taking 3, 3.5, or 4 hours, most travelers would prefer the reliable 3.5-hour trip. Reliability enables people to plan ahead and make the most productive use of their time.

Apart from time, another element of cost relates to the number of people traveling together. For group travel, automobiles typically have lower out-of-pocket costs per person than other modes of transportation do.

Elasticity of Demand

One way to understand the types of service that travelers value most highly is through formal economic models that relate the demand for rail service to its price and other characteristics. Studies of Amtrak in the 1970s generally concluded that, except for business travel in the East, demand was highly elastic with respect to price (in other words, an increase in price would greatly reduce demand and a decrease in price would greatly expand it).² Moreover, studies found that bus travel was a much closer substitute for rail than air travel was.

Economists Steven Morrison and Clifford Winston analyzed the demand for intercity travel by different modes of transportation. They modeled demand as a function of the costs and times of the various modes, the frequency of service, the characteristics of travelers and their households (such as income and how many people were traveling together), and other factors.³

Morrison and Winston found that the demand for rail service is much more sensitive to changes in cost and travel time than the demand for automobile or airline travel is. They determined that rail demand is elastic with respect to price, which means that reducing fares would increase revenues because it would attract disproportionately more passengers. They also found rail demand to be elastic with respect to time, estimating that a 1 percent increase in travel time would yield a 1.67 percent decrease in business trips and a 1.58 percent decline in vacation trips (see Table 3). As expected, business travelers had much less elastic demand with respect to cost than vacation travelers did for all transportation by commercial carrier, reflecting the fact that business travel is generally reimbursed by companies or clients, whereas vacation travelers usually pay their own way.

Because the duration of a trip includes access time to stations and waiting time as well as line-haul time, Morrison and Winston's analysis suggests that railroads could attract more passengers by locating stations in accessible and convenient places and by increasing the frequency of service (thereby diminishing waiting times) as well as by increasing the speed of the trains themselves.

That analysis used data collected in the late 1970s, before airline deregulation dramatically changed intercity travel. Rail, bus, and automobile travel have not changed as fundamentally since that time, however, so the conclusions about those modes are likely to still apply.

Demand for High-Speed Rail

The economic studies of the 1970s focused on existing rail service. More recently, studies have looked at the

2. See George W. Hilton, *Amtrak: The National Railroad Passenger Corporation* (Washington, D.C.: American Enterprise Institute, 1980), p. 36. Hilton cites internal Amtrak memoranda.

3. Steven A. Morrison and Clifford Winston, "An Econometric Analysis of the Demand for Intercity Transportation," *Research in Transportation Economics*, vol. 2 (1985), pp. 213-237.

Table 3.
Elasticities of Demand for Intercity Passenger Service

(Percent)	Automobile	Bus	Rail	Air
For Vacation Trips				
Cost	-0.45	-0.69	-1.20	-0.38
Travel Time	-0.39	-2.11	-1.58	-0.43
For Business Trips				
Cost	-0.70	-0.32	-0.57	-0.18
Travel Time	-2.15	-1.50	-1.67	-0.16

Source: Steven A. Morrison and Clifford Winston, "An Econometric Analysis of the Demand for Intercity Transportation," *Research in Transportation Economics*, vol. 2 (1985), pp. 213-237.

Note: These elasticities show the percentage decrease in demand for a particular mode of transportation that would result from a 1 percent increase in cost or travel time.

economic feasibility of high-speed passenger rail service, which currently operates in Japan and some European countries but not in the United States.⁴ Forecasting the demand for a service that does not yet exist is difficult for several reasons. Key determinants of the future demand for travel—population, employment, incomes, and economic linkages between cities—are themselves hard to predict. Moreover, the costs of using competing modes of transportation—such as future airline fares and gasoline prices—are difficult to forecast but would be critical in influencing the demand for high-speed rail service. Hence, any predictions about demand for high-speed rail must be regarded as uncertain.⁵

A study sponsored by the Department of Transportation and conducted by the Transportation Research Board (TRB) concluded that although forecasts of demand were uncertain, high-speed rail service would be unlikely to

attract enough travelers to break even financially.⁶ That study found that the primary potential demand for high-speed rail would be for trips of about 150 to 500 miles.⁷ It noted that demand would depend not only on the distance between cities connected by high-speed rail but also on those cities' populations, incomes, and the extent to which their economic and social activities complemented one another.⁸

The Department of Transportation conducted another study of the commercial feasibility of high-speed rail in the mid-1990s, as required by legislation.⁹ It approached the question of demand differently than earlier economic studies had, in part because projecting demand for something that does not yet exist is different from making estimates on the basis of empirical data. The feasibility study started by projecting demand for each mode of transportation—airlines, existing ("low-speed") rail, buses, and automobiles—in the absence of high-speed ground transportation and then developed estimates of the fares that would attract passengers away from those modes and maximize net revenue for high-speed rail.¹⁰ Next, the study projected the number of travelers currently using each mode who would switch to high-speed rail if it existed and then increased that number by as much as 10 percent to reflect "induced demand" (trips that had not previously taken place but would be stimulated by the attractiveness of the new mode). The model that was used for the study contained interactive effects between demand, revenues, system requirements, and costs.

Besides projecting demand and revenues, the feasibility study estimated passengers' consumer surplus and the

4. Some of those studies included magnetic levitation trains, which run on their own guideways but not on rails. For simplicity, this study uses the term "high-speed rail" instead of "high-speed ground transportation," which, strictly speaking, is more accurate.

5. See Transportation Research Board, *In Pursuit of Speed*, p. vi. For a discussion of demand methodologies, see pp. 104-106.

6. *Ibid.*, pp. vi-vii.

7. *Ibid.*, p. 6.

8. *Ibid.*, p. 101.

9. Department of Transportation, Federal Railroad Administration, *High-Speed Ground Transportation for America* (September 1997), commonly referred to as the "commercial feasibility study." It was required by section 1036 of the Intermodal Surface Transportation Efficiency Act of 1991 (P.L. 102-240).

10. *Ibid.*, p. O-10.

benefits to the public at large from high-speed rail.¹¹ The results of that study were more optimistic about the prospects for high-speed rail than the TRB study had been. The feasibility study concluded that for an array of rail-service options in several intercity corridors, passenger revenues could cover operating costs and contribute to paying capital costs.¹² However, government subsidies would be needed for the initial investments. The study argued that such subsidies would be justified in several cases because the total benefits—including consumer surplus and reductions in congestion and pollution—would exceed the total costs.

Both the TRB study and DOT's commercial feasibility study emphasized the sensitivity of their cost and benefit estimates to the specific route and type of service. Their results were intended to suggest the market and service parameters for which investing in high-speed passenger rail service would hold the most promise, but more thorough analysis would be necessary to evaluate specific proposals. (The potential costs of high-speed rail are discussed later in this chapter.)

The Supply of Passenger Rail Service

The supply of a product or service, such as passenger rail, generally depends on the costs of providing it. Most economic research on railroad costs has focused on freight service. However, the economics of passenger service are intertwined with those of freight rail because Amtrak uses freight railroads' tracks outside the Northeast Corridor. (High-speed rail service would probably require its own new tracks or substantial upgrading of existing tracks.)

Freight Railroad Costs

Economists have long been interested in the cost structure of railroads because of the central role they played in the

U.S. economy historically and the fact that they have been subject to federal regulation since 1887.¹³ Economists have studied railroad costs from the standpoint of whether the industry should be regulated to protect the public and, if so, what regulatory design is likely to achieve that goal with the least harm to economic efficiency.

In the late 19th century, alleged abuses by "robber barons," combined with the overall importance of rail transportation to the economy, provided an impetus for the federal government to regulate railroads to protect against monopoly power. Like other capital-intensive industries, railroads were characterized by economies of scale, in which the higher the level of output, the lower the average cost of producing it. The economies of scale associated with railroads' large fixed costs and low variable costs favored a monopolistic structure, and that structure carried the potential for charging high prices and providing poor service where no competition existed while charging low prices to try to undercut rivals (and drive them out of business) where competition did exist. Railroads made large investments in fixed plant—especially rights of way and track but also equipment. Once that fixed investment was in place, the cost of adding another car to a train (or carrying an additional ton of freight or an extra passenger) was relatively small. That cost structure led to the concern that prices would prove unstable and government regulation would be necessary.

Through the first half of the 20th century, railroads were generally considered to be a declining-cost industry—that is, the greater the output, the smaller the average production cost.¹⁴ Around the middle of the century, economists began to question some of the previous conventional wisdom. Groundbreaking statistical research by econo-

11. Consumer surplus is a measure of the difference between the value that people place on a product or service and the actual price they have to pay for it.

12. The study defined a corridor as "a natural grouping of metropolitan areas and markets that, by their proximity and configuration, lend themselves to efficient service by ground transport." See Department of Transportation, *High-Speed Ground Transportation for America*, p. O-1.

13. The Staggers Rail Act of 1980 (P.L. 96-448) removed many regulatory constraints, and the ICC Termination Act of 1995 (P.L. 104-88) eliminated the Interstate Commerce Commission. However, the ICC's successor, the Surface Transportation Board, continues to oversee rail rates, mergers and acquisitions, and construction and abandonment of railroad lines.

14. Robert E. Gallamore, "Regulation and Innovation: Lessons from the American Railroad Industry," in José A. Gómez-Ibáñez, William B. Tye, and Clifford Winston, eds., *Essays in Transportation Economics and Policy: A Handbook in Honor of John R. Meyer* (Washington, D.C.: Brookings Institution, 1999), p. 498.

mists John Meyer, Merton Peck, John Stenason, and Charles Zwick suggested that railroads were characterized by constant returns to scale—in other words, that the average cost of production did not rise or fall as the amount of service changed.¹⁵ By the 1970s, economists were considering economies of scope (declining average costs as geographic or product coverage increases) and economies of density (declining average costs as the amount of service on a route or network increases) as well as economies of scale. Theodore Keeler concluded that freight railroads' main lines were likely to be subject to constant returns to traffic density, whereas other lines had increasing returns to traffic density.¹⁶ Surveying recent studies of transportation costs, Ronald Braeutigam reported that most indicate no significant economies of scale for railroads, although many find economies of density.¹⁷

Amtrak's Cost Structure

Amtrak's cost structure has some similarities to and differences from that of freight railroads. Economies of density suggest that, like freight railroads, Amtrak could gain by providing more-frequent service in high-volume markets and not trying to serve less-dense markets. Conversely, outside the Northeast Corridor, Amtrak's cost structure differs from that of freight railroads in that it is not characterized by the large fixed costs of infrastructure (since Amtrak uses the freight railroads' tracks).

Amtrak has many costs that do not vary much, or at all, with the quantity of service provided. For example, its interest costs have risen sharply as the company has increased its debt load from \$1.7 billion in 1997 to \$4.8

billion at the end of 2002.¹⁸ As noted earlier, its interest expense in 2003 is expected to exceed \$250 million. Amtrak's depreciation costs have also risen substantially in recent years as it has increased its capital investment. Those costs are essentially fixed in that they do not depend on the amount of service offered.

In addition, although economists usually think of labor costs as variable, some of Amtrak's labor costs are essentially fixed—or at least not as avoidable as might be expected.¹⁹ Before enactment of the Amtrak Reform and Accountability Act of 1997, Amtrak was required to provide up to six years' worth of compensation to workers who lost their jobs when service on a route was discontinued (or reduced to fewer than three trains a week). Section 141 of the Reform Act removed those statutory labor-protection provisions and required Amtrak to negotiate new provisions within six months as part of the collective bargaining process. In November 1999, after Amtrak had deferred the issue, an arbitrator set new rules governing employee protection, including up to five years' worth of compensation rather than the previous six.²⁰ The arbitrator said the new provisions could be amended through negotiations beginning in January 2000, but no new agreement has been announced.

Labor costs make up around half of Amtrak's total operating costs. About 90 percent of the company's 22,000 employees are covered by collective bargaining agreements.

15. John R. Meyer and others, *The Economics of Competition in the Transportation Industries* (Cambridge, Mass.: Harvard University Press, 1959).

16. Theodore E. Keeler, *Railroads, Freight, and Public Policy* (Washington, D.C.: Brookings Institution, 1983), p. 57. Because of legislation enacted in 1980 that substantially lessened regulation of freight railroads and made it easier for them to abandon little-used routes, the cost structure of major railroads may reflect the constant returns that Keeler found for the main lines.

17. Ronald R. Braeutigam, "Learning about Transport Costs," in Gómez-Ibáñez, Tye, and Winston, eds., *Essays in Transportation Economics and Policy*, p. 77.

18. See the statement of Kenneth M. Mead, Department of Transportation Inspector General, "Amtrak's Financial Condition," before the Subcommittee on Transportation and Related Agencies of the Senate Committee on Appropriations, June 20, 2002, p. 4 for the 1997 number; and Amtrak, *2002 Audited Consolidated Financial Statements* (Washington, D.C.: National Railroad Passenger Corporation, 2003) for the 2002 number, which includes current liabilities and long-term debt and lease obligations.

19. Avoidable costs are those that would not be incurred if a given train or route was discontinued.

20. See background material prepared for an April 11, 2002, hearing on Amtrak's status by the Subcommittee on Railroads of the House Committee on Transportation and Infrastructure, available at www.house.gov/transportation/rail/04-11-02memo.html. The Reform Act established a process and timetable for negotiation and dispute resolution. When Amtrak and its unions were unable to reach agreement, they submitted to binding arbitration.

Negotiations ending in 2000 raised wage payments for covered employees “by about \$248 million over the cost-of-living increases paid for the period 1996 to 2000.”²¹ The growth in wages and benefits does not appear to have been matched by increases in productivity.²²

Even on the level of individual trains or routes, the principles of fixed and avoidable costs are relevant to business decisions. Like airplane seats or hotel rooms, train seats are perishable commodities. Empty seats are a lost opportunity to earn revenue. Most airlines have sophisticated “yield management” systems that let them adjust fares up or down depending on whether a flight is filling up more quickly or more slowly than its historical pattern. Such systems might be too costly for Amtrak relative to the potential gains, but Amtrak could add to its net revenue by filling any empty seats with passengers who were willing to cover just their additional cost, which would probably be very small.

Costs of High-Speed Rail

High-speed passenger rail service requires a higher standard for tracks and alignments than the standard that currently characterizes most freight rail systems.²³ Thus, such service could require significant upgrades to existing track. For trains traveling faster than 150 miles per hour, safety and operating considerations make dedicated track desirable. Highway/rail grade crossings are a concern for the safety of both train passengers and motorists, necessitating either significant improvements at grade crossings or (especially for very high speed trains) their elimination. Therefore, building high-speed rail systems would most likely entail substantially higher costs than making marginal upgrades to the existing Amtrak system would.

The 1997 DOT study of the commercial feasibility of high-speed rail estimated the cost of building tracks that would accommodate trains operating at speeds of 90 miles per hour to 200 miles per hour in several corridors. Typical estimates of the initial investment ranged from \$459 million for 90-mile-per-hour service on the 128-mile route between San Diego and Los Angeles, to \$9.2 billion for 150-mile-per-hour service on the 545-mile route between Los Angeles and San Francisco (LA-SF).²⁴ “New high-speed rail”—defined as steel-wheel-on-rail systems with maximum operating speeds of about 200 miles per hour—was estimated to cost \$15.8 billion on the LA-SF route and \$19.1 billion on the Northeast Corridor. Magnetic levitation (maglev) systems were estimated to be even more expensive: \$23.4 billion for the LA-SF corridor, \$22.1 billion for the Northeast Corridor, and \$33.4 billion for an 878-mile system including the Northeast Corridor and the Empire Corridor between New York City and Buffalo.²⁵

Those estimates appear optimistic. The feasibility study estimated that costs for the 306-mile route between Miami and Tampa would range from \$4 million to \$7 million per mile for trains traveling up to 125 miles per hour, \$14 million per mile for 200-mile-per-hour service, and \$23 million per mile for maglev service. Recent estimates by companies proposing to build a 125-mile-per-hour rail system on the 90-mile route between Tampa and Orlando were around \$30 million per mile.²⁶ That difference underscores the cautionary note in the DOT study, which stated that more-detailed cost estimates than those in the study would be necessary before making a commitment to any given project. It also suggests that actual costs

21. Department of Transportation, Office of the Inspector General, *2001 Assessment of Amtrak's Financial Performance and Requirements* (January 24, 2002), p. 6.

22. See General Accounting Office, *Intercity Passenger Rail: Amtrak Will Continue to Have Difficulty Controlling Its Costs and Meeting Capital Needs*, GAO/RCED-00-138 (May 2000), pp. 22-28, for a discussion of Amtrak's difficulties in getting its labor costs under control.

23. The precise standard that is necessary depends on the top speed. See Department of Transportation, *High-Speed Ground Transportation for America*, Chapters 5 and 7.

24. Department of Transportation, Federal Railroad Administration, *High-Speed Ground Transportation for America*, p. 7-21, and *High-Speed Ground Transportation for America, Statistical Supplement*, pp. 1-2 and 4-5. All of those costs are present values as of 2000, discounted at 7 percent, in 1993 dollars. See page 4-1 of the report for its general assumptions.

25. Department of Transportation, *High-Speed Ground Transportation for America, Statistical Supplement*, pp. 28-30.

26. Joe Follick, “Train Proposals Unsealed Monday: Bids Show High-Speed Rail Could Cost Up to \$2.7 Billion,” *Tampa Tribune*, March 11, 2003.

would be substantially higher than those presented in the study.

Externalities and Economic Efficiency

DOT's study of the feasibility of high-speed rail indicated that in some cases, such service could provide benefits to the general public, not just to rail passengers. When a service carries with it external costs or benefits ("externalities"), government subsidies can sometimes lead to greater efficiency in the use of resources (for more information, see Box 1).

Rail supporters contend that in crowded areas, such as the Northeast Corridor, a rationale exists for subsidizing rail service because doing so could reduce congestion at airports and on highways. That argument has two major weaknesses, however. First, passenger rail service accounts for such a small proportion of travel that it cannot contribute greatly to alleviating congestion or pollution.²⁷ Second, even if it could, providing subsidies for rail would be a less efficient way to address those externalities than charging for them directly would be. For example, economic efficiency could be increased at congested airports by charging higher prices for peak-hour takeoffs and landings. That policy would encourage airlines to shift some flights to less congested times of the day.

Another possible justification for subsidizing passenger rail service would be if that service could provide backup transportation in the event of a national emergency. Although Amtrak played such a role in the immediate aftermath of the terrorist attacks of September 11, 2001, many travelers rented cars; took taxis, limousines, and buses; or drove their own vehicles for trips while the aviation system was shut down because of the attacks.

27. For a discussion of that issue, see Gerard J. McCullough, "Amtrak Subsidies and Transportation Externalities," in Transportation Research Board, *National Conference of Critical Issues for the Future of Intercity Passenger Rail*, Transportation Research Circular No. 484 (Washington, D.C.: National Research Council, March 1998), pp. 27-29; and General Accounting Office, *Intercity Passenger Rail: Assessing the Benefits of Increased Federal Funding for Amtrak and High-Speed Passenger Rail Systems*, testimony before the Subcommittee on Transportation of the House Committee on Appropriations, GAO-01-480T (March 21, 2001), pp. 8-10.

Box 1.

Externalities

Economic efficiency is defined as the allocation of resources that produces the greatest satisfaction of wants within the constraints of scarce resources and technological limits. In a market economy, prices generally provide an incentive for efficient resource allocation: if the price of a good or service is equal to the value of the resources used in producing it, resources are allocated to their most efficient uses. (A price that is higher than the marginal cost of producing the good or service indicates that people place a greater value on it than on the resources consumed in producing it, so those resources should be converted into the higher-value good, and vice versa.)

Sometimes, however, markets do not reflect the full cost or benefit associated with the production or consumption of a good or service. That can happen when the production or consumption creates a by-product, such as congestion or pollution, whose costs are not borne directly by producers or consumers. Congestion and pollution are referred to as "externalities" because they are costs that are borne by people other than the direct producers or consumers. Strictly speaking, congestion costs are borne by consumers, but they are considered externalities because each additional unit—such as each additional car on the road—adds to the costs (in terms of time) of other users. Of course, the additional driver also incurs some of the congestion cost; that is, the externality is internalized to some extent.

Rail's Comparative Strength: Densely Populated Corridors

The decline in rail travel over the past half-century is a consequence of the basic economics of supply and demand. Automobiles have an economic advantage on most short trips between cities, and airlines have an advantage on most long trips. Rail has its best chance of success on routes of about 100 miles to 300 miles that connect cities with large populations. The Northeast Corridor meets those criteria and is where Amtrak has achieved its best results. In addition, corridors in California and the Pacific Northwest have some of those characteristics, and rail ser-

Box 2.**Can the United States Learn from Other Countries' Experience with Passenger Rail?**

Passenger rail is a much larger component of intercity transportation in some nations than it is in the United States. France, Germany, and Japan, for example, have convenient high-speed trains that whisk passengers between major cities in comfortable, reliable cars. What accounts for the differences in passenger rail between other countries and the United States?

Geographical factors and government policies are the main sources of those differences. European countries and Japan are more compact than the sprawling United States, making intercity travel by rail as fast as travel by air. In addition, those nations' governments have promoted passenger rail through various policies, including:

- *Direct government subsidies of passenger rail.* The countries whose rail service is most often compared with that of the United States—Japan, France, Germany, the United Kingdom, and Canada—all subsidize passenger rail heavily. Only on Japan's main island, Honshu, is passenger rail able to cover its operating costs with operating revenues.¹
- *Government subsidies of local mass transit.* Those subsidies, along with planning to accommodate interconnections between transportation lines, have

led to convenient mass transit links with intercity railroad stations—something that is often lacking in the United States.

- *Steep taxes on gasoline.* Very high gasoline taxes have made automobile use more expensive and ownership less prevalent than in the United States, which reduces competition with rail for short to medium-length intercity trips.
- *Protective policies toward airlines.* Until recently, many European countries tried to shelter their national airlines from competition. The high air fares that resulted from those policies made air travel much more expensive than rail. In contrast, the deregulated air fares in the United States have made air travel affordable to everyone but people at the lowest income levels.
- *Government regulation of safety.* European trains do not have to meet as high standards of crashworthiness as the Federal Railroad Administration requires of U.S. trains, which makes them lighter and less expensive to operate.²

1. John Frittelli, *Foreign Intercity Passenger Rail: Lessons for Amtrak?* CRS Report for Congress RL31442 (Congressional Research Service, June 7, 2002), p. 13.

2. The main exception to the U.S. rules involves the Spanish-built Talgo trains used in the Cascades service in the Pacific Northwest. Those trains received a waiver from the Federal Railroad Administration after some modifications were made to increase their safety.

vice appears to be gaining in popularity there as state governments have provided subsidies to improve its quality and frequency. The key ingredients for passenger rail are clusters of densely populated areas within about 300 miles of each other that have congested highways and airports. The Northeast Corridor contains a string of population centers, each of which generates demand for travel to neighboring cities that can be reached by rail in no more than about four hours—a travel time for which rail is competitive with airlines.

Moreover, the cities in the Northeast developed before automobile use was widespread. As a result, many of them have central business districts with large populations of office workers and convenient public transportation between workers' homes and offices. Intercity train stations are generally located in or near those central business districts, which makes rail more attractive than airplanes for journeys between downtown areas, because flying requires traveling (often in congested traffic) to outlying airports. As the population and commercial activity of cities decentralize, however, rail's advantage wanes.

Before the terrorist attacks of September 11, 2001, New York's LaGuardia Airport suffered severe congestion, causing delays in air travel. Especially when bad weather limits visibility and airplanes must maintain greater distances between each other, travelers have found that trains can carry them to their destination as fast as airplanes can and with greater predictability. Although the recent decline in air travel because of terrorism and recession has alleviated congestion in the air, new delays associated with security procedures have lengthened trips by airplane.

In general, the characteristics—both geographical and political—that favor passenger rail are more commonly found in European countries and Japan than in the United States. (*Box 2* summarizes those characteristics.)

Rail's Comparative Weakness: Long-Distance Service

Long-distance train service has several characteristics that make economic success difficult to achieve. As discussed at the beginning of this chapter, passengers are sensitive

to trip times. Because rail trips between cities located more than 300 miles apart take longer than airline trips—and often longer than highway travel—long-distance train travel is costly in terms of the value of travelers' time.

Scheduling trains to meet passengers' demands is another challenge. Any train traveling more than 1,000 miles must inevitably pass through some communities at times that are inconvenient for most travelers. Trains stop at some stations in the wee hours of the morning. Not only are there few people who wish to board or arrive at those times, but providing station services in the middle of the night is costly. Sometimes a timetable that makes sense between distant points results in schedules that render one-day round-trip travel between nearby cities impossible.

On the supply side, long-distance trains currently provide sleeping and dining cars, which are expensive to operate. Long-distance trains are in effect mobile hotels and require the specialized services associated with the hospitality industry—albeit under more complex conditions.

Policy Options for the Future of Passenger Rail

Current federal policy toward Amtrak is not sustainable. The \$1.04 billion federal subsidy that Amtrak received for 2003 will enable the company to do little more than limp along, rationing its resources to cover operating losses on nearly every route. Amtrak estimates that it will require about \$2 billion in federal assistance annually for the next five years to cover its operating needs and to address a large backlog of capital investments.¹ Without increases in subsidies, the condition of both the Northeast Corridor infrastructure and Amtrak's passenger cars and engines is likely to decline further. That decline will make travel by rail less safe, less reliable, and less attractive to passengers. Amtrak has requested \$1.8 billion in federal aid for 2004; the Bush Administration has asked for half that amount.

The tortuous history of public policy toward Amtrak indicates the difficulty of reaching agreement about the appropriate federal role in passenger rail. Laws enacted over the past 30 years have included attempts to gain greater federal control (some would say "micromanagement") of Amtrak as well as attempts to give the company greater latitude to run its enterprise as a business. At times, the Congress has directed Amtrak to take specific actions to rationalize the rail system, and at other times, it has provided only broad guidance about objectives. The results

of those efforts—however well intentioned—have pleased few people.

Passenger rail policy is a classic case in which most of the benefits are concentrated among a few identifiable groups but the costs are borne widely by taxpayers. Eliminating a train or route—or even all of Amtrak—would not save enough money for an individual taxpayer to notice, but it would have a marked effect on current passengers, railroad workers, and (to a lesser extent and depending on the circumstances) freight and commuter railroads, suppliers, and Amtrak management.² Finding a compromise policy for passenger rail that offered improvements for all parties would probably be impossible. But compromises might exist that would use resources more efficiently and allow compensation for parties that were made worse off.

The federal government has several policy approaches available—ranging from ending subsidies (which would most likely lead to a shutdown of all or most intercity passenger rail service) to making massive new investments that would not only upgrade the existing system but also provide new high-speed service in corridors throughout the country. This chapter evaluates four options that cover a broad range of policy choices with regard to the future level of federal support for passenger rail service.

1. Amtrak, "Amtrak Recommends \$1.8 Billion Federal Operating and Capital Investment Grant for Fiscal Year 2004" (news release, February 20, 2003), available at www.amtrak.com/press/atk20030220028.html.

2. See the appendix for more details about Amtrak's relationships with freight and commuter railroads.

Box 3.**Should Amtrak Be On-Budget?**

Because Amtrak is considered a private corporation, its transactions are not included in the federal budget. However, the *Report of the President's Commission on Budget Concepts*, which provided the conceptual basis for the government's overall budget, concluded that the budget should include all programs of the federal government and its agencies.¹ According to guidelines in the report, entities like Amtrak would be treated as federal.

The criteria in the report for determining whether an entity is federal include the entity's ownership, the source of its capital, who selects its managers, and the degree of control that the President and the Congress exercise over it. Applying those criteria to Amtrak suggests that the decision to exclude the railroad from the federal budget should be revisited.

- *Ownership.* The first claim to any profit that Amtrak might earn is held by the Secretary of Transportation, who owns all preferred stock in Amtrak. Some of today's freight railroads hold common

stock certificates, which could be interpreted as giving them nominal ownership of Amtrak. (Those certificates were issued to the railroads as compensation for some of the rolling stock and lines that were used to form Amtrak in 1970.) However, those common shares convey virtually no benefits to the holders. Amtrak does not produce any earnings or dividends and does not convene an annual meeting of shareholders.

- *Source of capital.* The federal government is the primary source of capital for Amtrak. When the company was created, lawmakers hoped that such assistance would be temporary until Amtrak became self-supporting, profitable, and creditworthy. That hope has not been realized.
- *Selection of managers.* The President appoints Amtrak's entire board of directors with the advice and consent of the Senate.
- *Degree of control.* The federal government has extensive control over Amtrak's policies through the board of directors that it appoints and through the leverage that it gains by providing essential financial support.

1. See President's Commission on Budget Concepts, *Report of the President's Commission on Budget Concepts* (October 1967).

Those options do not address all of the rail-related issues that are currently under debate, however—many of which are difficult to resolve. If policymakers can agree on a vision for passenger rail over the next 10 or 20 years, they can more productively tackle such issues as governance (including budgetary treatment, accountability, and transparency), financing (from federal, state, and local governments and private-sector investors), and the desirability of separating infrastructure from operations. For example, if federal spending on rail increased, policymakers might want to record Amtrak's transactions in the federal budget to make the company more accountable for its use of federal funds.³ (For a discussion of Amtrak's budgetary

treatment, see Box 3.) The 2003 appropriation law took a small step in that direction by requiring that the Department of Transportation disburse subsidies for Amtrak only after the railroad has provided enough information to satisfy DOT that the funds will be used according to a business plan approved by the department.

The options examined in this chapter are only broad outlines, so the Congressional Budget Office has not estimated their federal costs. (Doing so would require greater specificity for each option.) However, the broad options can be analyzed qualitatively in terms of their expected implications for economic efficiency and their distributional effects. The efficiency effects are discussed with respect to several factors: rail service in particular and transportation service in general, externalities, and dynamic effects (that is, how investment decisions today

3. Federal grants to Amtrak are shown in the federal budget, but Amtrak's revenues, expenses, and other financial transactions are not.

might affect future costs both to the private sector and to society as a whole). The distributional effects include impacts on passengers, railroad workers, commuter and freight railroads, and taxpayers.

Option I: Eliminate Federal Subsidies and Provide for an Orderly Shutdown of Service

Ending federal subsidies would essentially implement the outcome that the Amtrak Reform and Accountability Act of 1997 envisioned if Amtrak did not achieve operating self-sufficiency by 2003: restructuring or liquidation. The federal government could cease providing subsidies immediately, thus driving Amtrak into bankruptcy and liquidation. Alternatively, it could provide subsidies for another year or two, with the understanding that they would be used for transitional assistance to railroad workers and to the state and local governments most acutely affected by the shutdown.

Amtrak might be able to reorganize itself around a few routes, but bankruptcy law does not give railroads as much latitude as companies in other industries have to free themselves of obligations.⁴ In particular, the law does not permit the bankruptcy trustee or the court to impose changes in labor contracts as part of restructuring.⁵ Burdened with the costs of those contracts, Amtrak might be unviable and thus forced to liquidate. A limited set of corridor services might be bought by investors or states, but most corridor and all long-distance service would probably be shut down.

Effects on Economic Efficiency

In the absence of externalities, this approach would lead to an efficient outcome in terms of transportation economics. Only service that was sustainable without federal support would continue, and the cost of that service would be borne by consumers who were willing to pay for it or

by state and local governments that deemed the benefits of having rail service worth the cost of subsidizing it. (Currently, 13 states provide Amtrak with a total of \$136 million a year to support service to their communities.)⁶ Eliminating federal subsidies for passenger rail would cause a shift to more efficient modes of transportation—bus, airplane, and automobile.

In places where airport or highway congestion is a problem, this option could result in some inefficiency because its market-based approach does not take account of such externalities. However, as noted earlier, available information suggests that passenger rail does not contribute significantly to alleviating congestion on other modes of transportation. This option also neglects possible benefits of having alternative modes available.

Ending federal support for intercity passenger rail service would complicate—though not prevent—the introduction of new service in the future. Some of the domestic technical know-how of producing and operating modern equipment and service might be lost in the absence of current demand for it. If passenger rail service was revived in the future, however, new technologies would most likely be available from foreign sources. Moreover, most proposals for high-speed rail have been made independently of Amtrak and have assumed the construction of new tracks that could safely accommodate fast trains.

Distributional Effects

This option would affect taxpayers, passengers, commuter and freight railroads, and railroad employees. It would save federal taxpayers about \$1 billion a year, based on the current rate of subsidy. Passengers would have to turn to buses, airplanes, or cars for the 25 million trips they take on Amtrak each year. Even if all of those passengers crowded onto buses or airplanes, they would increase the demand for those modes only marginally, because those modes already provide 99 percent of the passenger-miles taken on commercial carriers annually.

In the Northeast Corridor, state and local transportation agencies operate commuter rail service along Amtrak's

4. General Accounting Office, *Intercity Passenger Rail: Potential Financial Issues in the Event That Amtrak Undergoes Liquidation*, GAO-02-871 (September 2002). Appendix I contains a detailed description of the bankruptcy process for railroads.

5. See 11 U.S.C. 1167. If the Congress wanted to treat railroads like other industries, it could amend the bankruptcy law.

6. Amtrak, "Amtrak Recommends \$1.8 Billion Federal Operating and Capital Investment Grant for Fiscal Year 2004."

tracks and use Amtrak's stations and other facilities. Currently, the commuter railroads are required to pay Amtrak only for the marginal costs they impose. If Amtrak stopped operating, those agencies would probably find a way to continue running commuter service, but they would most likely have to cover the full costs of infrastructure and operations themselves through increases in fares or subsidies. The federal government could provide transitional assistance to those state and local agencies, or it could allow them to divert existing federal aid for other programs (such as highway and transit programs) to corridor rail service.

Elsewhere in the country, Amtrak provides commuter rail service under contracts with state and local agencies. In the aftermath of Amtrak's threatened shutdown in July 2002, some of those agencies have taken steps to ensure that service can continue in the event that Amtrak no longer meets its contractual obligations. (See the appendix for more details.)

Under existing labor agreements, Amtrak is obligated to give workers who lose their jobs when service is discontinued up to five years' pay and benefits. If Amtrak shut down, it would be liable for about \$3.2 billion in such claims, according to a recent estimate by the General Accounting Office.⁷ Whether Amtrak would have enough assets to pay those claims is doubtful. The federal government might choose to pay some or all of them—or to offer other assistance to Amtrak's workers—although, according to the Comptroller General, the government is not liable for any of Amtrak's debt.⁸

A shutdown of Amtrak would also have consequences for the Railroad Retirement System—the counterpart to Social Security for railroad workers. Amtrak's employees contribute about \$400 million to the system annually, about 9 percent of its total receipts. The Railroad Retirement Board has estimated that the system would need additional funding by 2024 (or increases in payroll taxes

for freight railroad workers or reductions in benefits) if contributions from Amtrak employees ceased.⁹

Option II: Reorganize to Build on Passenger Rail's Comparative Strengths

This option would focus federal resources on the Northeast Corridor and other corridors that have the requisite characteristics to take advantage of rail's comparative strengths. The national network of passenger rail service would be eliminated, and the resources saved by discontinuing long-distance trains would be deployed where the payoff is likely to be the greatest: rebuilding and maintaining infrastructure, cars, and engines on high-density corridors that already serve a large number of rail passengers. That shift in focus could make train travel safer and more reliable and could stimulate increased ridership and support for passenger rail. The Northeast and West Coast corridors could serve as demonstration projects for other corridors where the necessary conditions for efficient rail service are emerging.

As noted earlier, trip time is an important determinant of a traveler's choice of mode. For rail, that means not just line-haul time but also access and waiting times. Reducing rail travel time by choosing convenient locations for stations and by providing greater frequency of service could be as effective in wooing passengers as building costly new infrastructure to accommodate high-speed trains would be. In addition, the reliability of schedules (to minimize unscheduled delays) could be enhanced by devoting more resources to maintaining equipment and infrastructure. Greater reliability could increase the demand for train travel—attracting more passengers and inducing them to pay more for their tickets.

This option would build on the comparative strengths of passenger rail service. As discussed in Chapter 4, passenger rail works best where population densities are high and where trip times between cities are no more than about four hours. High densities work to rail's advantage because they produce a large number of potential travelers and because they generate congestion delays that make

7. General Accounting Office, *Intercity Passenger Rail: Potential Financial Issues in the Event That Amtrak Undergoes Liquidation*, pp. 4, 17-18.

8. See opinions B-277814 (October 27, 1997) and B-217662 (March 18, 1985) of the Comptroller General.

9. General Accounting Office, *Intercity Passenger Rail: Potential Financial Issues in the Event That Amtrak Undergoes Liquidation*, p. 5.

other modes of transportation relatively less attractive.¹⁰ Rail also has an advantage for travelers whose origin and destination are easily accessible to train stations—which often means accessible to local public transit. (If people taking short intercity trips have to drive any appreciable distance to get to the train station, they are likely to save time by making the entire trip by car.) By focusing on areas where passenger rail is most competitive, this option would ensure that federal subsidies were used more cost-effectively than they are now.

Effects on Economic Efficiency

This approach would promote greater efficiency in long-distance transportation because it would prompt a shift to more cost-effective modes for such travel. For congested corridors, it could lead to greater efficiency than Option I if the size of the subsidies reflected the cost of the congestion externalities (although, as discussed earlier, the size of such externalities is unknown, and there are more-direct ways to address the externalities of one mode than to subsidize another).

This option would also provide a demand for improving short-distance intercity service—which could include upgrading tracks, signaling systems, and equipment. If ways could be found to provide corridor service more efficiently, that could stimulate interest in investing in corridors with emerging demand for rail transport.

Distributional Effects

Eliminating nationwide service would inconvenience some passengers, although relatively few travel long distances by train even on long-distance routes. (Most passengers board those trains and disembark at intermediate points.) Gaps caused by the loss of service could be filled by airlines and intercity bus companies, which serve many more communities than Amtrak does now.

Because passenger trains use the tracks of freight railroads, this policy would not preclude the possibility of resuming passenger service in the future. As long as freight railroads

continue to use the tracks, the infrastructure will be maintained to accommodate freight trains. A future decision to bring back passenger service might require investment to upgrade tracks, but rights of way and basic services would already be in place.¹¹

Like Option I, this policy would cause disruptions for Amtrak's workforce. Some workers could be redeployed to corridor services, but others would lose their jobs. Even those who continued to be employed might have to move to new locations and learn new job skills. Depending on the amount of money that lawmakers were willing to provide, those workers could receive some compensation or retraining to mitigate the policy's negative effects.

In terms of the impact on taxpayers, this option could be designed to use the same size federal subsidy as currently; the only difference is that the money would be used more cost-effectively, so taxpayers would get more benefit for the dollar.

Option III: Upgrade the Corridors and Keep the Existing National Network

This option would maintain the existing level of service on long-distance routes while providing additional resources for the high-density corridors where rail has an economic advantage. With regard to the corridor investments, the efficiency and distributional effects would be similar to those described in Option II.

Although Amtrak has to pay freight railroads only the incremental cost of using their tracks—and thus avoids the large costs of owning and maintaining railroad infrastructure outside the Northeast Corridor—it has been unable to earn enough revenues to cover costs. Continuing to subsidize long-distance rail service draws resources that could be spent on highways and aviation. This option would measure up favorably in terms of economic efficiency only if the demand for long-distance rail transport

10. Passenger rail itself is not immune from congestion; at peak holiday travel times, rail service can be crowded. Moreover, some freight rail corridors have become congested, especially when the economy is booming, which has caused delays in passenger service.

11. Under current law, Amtrak has access rights to the freight railroads' tracks on favorable terms. If those rights were extinguished, a future operator of passenger service would have to negotiate with the freight railroads for such access and would probably have to pay more than Amtrak does now.

increased substantially in the future—something for which there is little empirical support. If that happened, this option would have the benefit of stimulating further investment to improve rail speed, safety, and reliability.

Keeping the national system at current levels of service would mean that none of the beneficiaries of current policy would lose. The additional costs associated with upgrading corridors while maintaining long-distance service would be paid through increases in taxes or cuts in other government programs. If state and local governments were willing to provide subsidies, the impact on the federal budget would be lessened, but that would require those governments to make similar difficult resource-allocation decisions.

A variant of this approach—which could moderate the costs somewhat—would involve reducing some of the on-board services offered on long-distance trains. The expensive-to-operate sleeping and dining cars could be eliminated on the grounds that they are a costly luxury for which there is little justification for taxpayer subsidies. Instead, long-distance trains could provide only the coach and cafe service offered on corridor trains. Alternatively, travelers desiring luxury services could be charged prices high enough to cover the cost. Such measures would not have much effect on people traveling shorter distances on long-distance trains. Long-distance travelers who wanted hotel accommodations could disembark and stay in hotels along the way, catching the next convenient train to their destination.

Option IV: Substantially Upgrade Both the Corridors and Long-Distance Service

This option envisions a future in which passenger rail would play a much more prominent role in intercity transportation, compared with other modes, than it does today. The option would substantially upgrade track and equipment for both corridor service and long-distance service across the country. Those upgrades would entail large increases in federal assistance—at least several billion more dollars per year.

This approach could include a program of massive new investment in rail service in the “high-speed rail corridors”

designated by DOT in response to legislation. Although most of those corridors do not have the size or density of population necessary for passenger rail to have an economic advantage, those conditions might materialize in the future—particularly if the resources devoted to rail investments were diverted from investments in highways and airports. If policymakers sought to make rail the dominant mode for travel up to several hundred miles, they could focus federal resources to help make that happen.

Effects on Economic Efficiency

Analysis of the available data suggests that this option would not be economically efficient under any of the criteria used to evaluate the various policy choices in this study. The shift in emphasis envisioned in this approach is so large that past or present experience provides little guidance. The many billions of dollars per year needed to implement this option could probably come only from raising taxes, cutting spending, or increasing the federal budget deficit. Within the framework of the Congressional authorization and appropriation processes, such an increase in funding would most likely entail trade-offs among transportation programs—highways, transit, and aviation—and thus would lead to a significant shift of transportation resources from more-efficient modes (highways and aviation) to less-efficient rail.

More than any of the alternatives, this option rests on the idea that rail provides large and unique external benefits in mitigating congestion and pollution and in influencing patterns of regional economic development. For example, rail might stimulate development—or redevelopment—around train stations in central cities and help stem the tide of suburban sprawl. (The evidence on whether sprawl is harmful or beneficial to the economy is mixed, however.)¹² In addition, this approach would yield the benefit

12. See, for example, Andrew F. Haughwout, “The Paradox of Infrastructure Investment: Can a Productive Good Reduce Productivity?” *Brookings Review*, vol. 18, no. 3 (Summer 2000), pp. 38–41; Joel S. Hirschhorn, *Growing Pains: Quality of Life in the New Economy*, Report No. 13467 (Washington, D.C.: National Governors’ Association, June 2000), available at www.nga.org/cda/files/GROWINGPAINS.pdf; and Steven Hayward, “*Growing Pains: The NGA’s Flawed Report on Sprawl*,” Backgrounder No. 1393 (Washington, D.C.: Heritage Foundation, September 13, 2000),

of providing alternative transportation in case a national emergency caused highways, airports, and airways to shut down. By its nature, this option rests on a claim of long-term dynamic gains.

Distributional Effects

The big winners from substantially upgrading passenger rail service nationwide would be railroad workers. Passengers would also gain by having more transportation alternatives. The possible effects on commuter and freight railroads are less clear. If intercity passenger rail operators tried to increase service on existing freight rail tracks, congestion would most likely become a serious problem—as it already is on a few freight lines. Conversely, if track capacity was increased, commuter and freight railroads could benefit.

The big losers would be current and future taxpayers—whose taxes would go up to pay for the increased subsidies—and other modes of transportation, from which federal funds would probably be diverted. If the advocates of large investments in rail are correct, however, future taxpayers would receive compensating benefits from the substantial investment in passenger rail.

Conclusions

Seeking a consensus about long-term federal policy toward passenger rail may be unrealistic. If policymakers cannot reach agreement about passenger-rail issues, then Amtrak

which is available at www.heritage.org/Research/SmartGrowth/BG1393.cfm. There does not even appear to be consensus about what “sprawl” is.

is likely to limp along as it has for the past 33 years: not quite satisfying anyone, not providing the most valued rail service per dollar of subsidy, but not costing very much relative to the size of the economy and the federal budget.

Legislation governing Amtrak has often had unintended consequences. One example is the requirement in the 1997 Reform Act that the company achieve operating self-sufficiency by December 2002. Although lawmakers were by no means unanimous in desiring that goal or in considering it realistic, Amtrak set out to show that it was on a “glide path” to self-sufficiency by narrowing the gap each year between operating expenses and operating revenues. But it did so in ways that, at least in retrospect, were counterproductive. The focus on that accounting objective led to ill-considered short-term measures that plunged Amtrak into more serious financial trouble.¹³

Among the lessons to draw from that experience is the importance of setting realistic goals for passenger rail, finding measures to assess progress along the way, making midcourse corrections if necessary, and requiring much greater transparency and accountability in return for federal subsidies.

13. In an interview, Amtrak Chief Executive Officer David Gunn said, “a lot of our problems are because of this ‘glide path’ business. . . . [The] basic problem that Amtrak has faced for the last few years was this glide path to self-sufficiency, which was unrealistic, but it created enormous problems for Amtrak by forcing the company to do things like mortgage Penn Station.” See “TW Exclusive Interview: Amtrak President & CEO David Gunn,” *Transportation Weekly*, Legislative Services Group, vol. 3, no. 43 (September 3, 2002), p. 5.

Amtrak's Interconnections with Freight and Commuter Railroads

Regardless of whether lawmakers opt for major changes, incremental adjustments, or the status quo, policies toward Amtrak have potential effects not only on the company's passengers, workforce, and suppliers but also on freight railroads and their employees and on commuter railroads.

Connections with Freight Railroads and Their Workers

The major interconnections that exist between Amtrak and freight railroads arise from the fact that Amtrak was created by spinning off those railroads' passenger service. Freight railroads use the Northeast Corridor, which Amtrak owns; Amtrak uses freight railroads' tracks outside the Northeast Corridor; and railroad retirement and unemployment systems cover employees of both freight railroads and Amtrak.

Freight Railroads' Use of the Northeast Corridor

The Railroad Revitalization and Regulatory Reform Act of 1976 provided for the transfer of ownership of the Northeast Corridor from Conrail (the government-owned freight railroad formed from the Penn Central and other bankrupt railroads in the northeastern United States) to Amtrak in order to facilitate the eventual transfer of Conrail to the private sector. Although that law merely authorized Amtrak to make access agreements with freight railroads, Amtrak conveyed to Conrail an easement granting exclusive freight access rights to the corridor in perpetuity for a reasonable fee. When the Surface Transportation

Board approved the joint acquisition of Conrail by CSX and Norfolk Southern in 1998, those railroads inherited Conrail's access rights. The need to provide tracks and services for Norfolk Southern and CSX, and the encumbrance that need would pose if Amtrak declared bankruptcy and was liquidated, mean that those property rights have major implications for Amtrak policy. Any taking of the access rights would require compensation for Norfolk Southern and CSX.

Amtrak's Use of Freight Railroads' Tracks

Federal law gives Amtrak the right of access to freight railroads' tracks outside the Northeast Corridor on very favorable terms: passenger trains have priority over freight trains, and Amtrak must pay freight railroads only the marginal, "out-of-pocket" cost of using their tracks. That cost has been interpreted as not including the cost of delaying freight trains. That arrangement was put in place in an era when the freight railroads generally had excess capacity and adding a few passenger trains to a route imposed relatively small costs. However, after the regulatory reforms of the Staggers Rail Act of 1980 made it easier to cut uneconomic service, the freight railroads streamlined their route structures and capital investment to a size that more closely matched the demand for service. With business growing in recent years, some freight railroads have experienced congestion on their tracks, and passenger trains have contributed to the costs of delay.

If Amtrak as a corporate entity was dismantled, policymakers would have to decide whether to preserve the

historic arrangement that gave the company favored treatment or whether to let any future operator of passenger trains negotiate such arrangements with freight railroads itself.

Interactions with Freight Railroad Labor

The federal Railroad Retirement System—the equivalent of Social Security for railroad workers—covers employees of both Amtrak and the freight railroads. The system relies largely on the contributions of current workers to pay the pensions of retirees. Amtrak and its workers contribute about 9 percent of the Railroad Retirement System's annual receipts—or about \$428 million.¹ If those contributions ceased, “the railroad retirement account would begin to decline in 2006 and would be in a deficit by 2024 if no actions were taken to increase payroll taxes or reduce benefits,” according to the Railroad Retirement Board.²

The unemployment insurance system for railroad workers, which the railroads pay into, would face similar problems. If Amtrak declared bankruptcy, its workers' unemployment insurance claims would probably be given priority to be honored. If the company was liquidated, other railroads that pay into the system would ultimately bear the costs of Amtrak's unemployment.³

1. General Accounting Office, *Intercity Passenger Rail: Potential Financial Issues in the Event That Amtrak Undergoes Liquidation*, GAO-02-871 (September 2002), p. 21.

2. *Ibid.*, p. 5.

3. *Ibid.*, p. 26.

Connections with Commuter Railroads

Changes in policy toward Amtrak could also affect commuter railroads (operators of service within a metropolitan area, such as between a city and its suburbs). In the Northeast Corridor, Amtrak provides tracks and services for commuter railroads at subsidized rates. State and local transportation agencies generally operate commuter service and use Amtrak's stations and other facilities. Currently, they are required to pay Amtrak only the marginal cost they impose. In effect, then, federal subsidies for Amtrak get passed through to subsidize commuter operations in the Northeast. If Amtrak stopped operating, state and local transportation agencies in that region would have to cover the full costs of infrastructure and operations for commuter service.

Outside the Northeast Corridor, Amtrak provides commuter rail service under contracts with state and local agencies. After Amtrak threatened to shut down in July 2002 because it was running out of cash, those agencies began exploring alternative ways to ensure that their service would not be disrupted if Amtrak could no longer meet its contractual obligations. For example, Southern California's commuter rail service (Metrolink) reached an agreement with RailAmerica, a Florida-based railroad operator, to keep service operating in case Amtrak fails to fulfill its contract.⁴

4. Nancy Luna, “Metrolink Will Keep on Track with Plan B,” *Orange County Register*, January 5, 2003.